HELSINKI SCHOOL OF ECONOMICS (HSE)
Department of Accounting and Finance

Conflicts of interest in M&A situations

Evidence from affiliated analysts' behaviour surrounding European M&A deals

Finance
Master´s thesis
Annika Luoto
Spring 2008

Approved by the Council of the Department 18 / 6 2008 and awarded the grade excellent, 80p.

KTT Sami Torstila KTT Matti Keloharju

Helsinki School of Economics
Master's thesis
Annika Luoto

Abstract
June 12, 2008

CONFLICTS OF INTEREST IN M&A SITUATIONS – EVIDENCE FROM AFFILIATED ANALYSTS' BEHAVIOUR SURROUNDING EUROPEAN M&A DEALS

PURPOSE OF THE STUDY

This thesis concentrates on studying conflicts of interests in merger and acquisition situations via analysts' recommendations. I aim to describe the origins and consequences of conflicts of interest between different parties and to find out if there is empirical evidence on any of these conflicts of interests.

DATA

My sample consists of analysts' recommendations about acquirer companies' stock in 814 merger and acquisition deals. The sample period is 1996-2006 and both acquirer and target are public European companies. There are a total of 6 278 recommendations in my sample of which 153 are target-affiliated analysts' recommendations, 236 acquirer-affiliated analysts' recommendations and 5 889 unaffiliated analysts' recommendations. Analyst affiliation is classified according to advisor relationship so that both acquirer- and target-affiliation is considered separately. M&A data is gathered from SDC database and analyst recommendations data is collected from JCF database for institutional investors.

RESEARCH METHODS

The effects of affiliation, analyst report timing, and deal specific and timing related variables on recommendations and recommendation revisions are studied by using ordered logistic regression. Additionally, summary and descriptive analysis is used to analyse the data.

RESULTS

My main results are related to the absolute recommendation levels. I find evidence that, in general, acquirer-affiliated analysts issue more high level recommendations about acquirer companies' stock and that target-affiliated analysts issue more low level recommendations compared to unaffiliated analysts. In addition, deal value magnifies the bias in target-affiliated analysts' recommendations. My results suggest in addition, that acquirer-affiliated analysts issue more low level recommendations and target-affiliated analysts more high level recommendations for stock deals with at least 50 % stock financing than for my all deals sample. However, the low level recommendations issued by acquirer-affiliated analysts seem to concentrate on quarters -2 and -3 prior the deal announcement other quarters having more high level recommendations. These results are confirmed by my analysis on recommendation revisions. Additionally, my results imply that both affiliated and unaffiliated analysts issue lower level recommendations after the European regulation change in 2003.

KEYWORDS

Analyst affiliation, conflicts of interest, M&A deal, investment banking relationship

TABLES:

FIGURES:

1. Introduction

1.1. Background and motivation

"Our objective… is to adopt a policy, fully understood by the entire firm, including the Research Department, that we do not make negative or controversial comments about our clients as a matter of sound business practise."
(Morgan Stanley internal memo, published in the Wall Street Journal, July 14, 1996)

As can be seen from the citation from Morgan Stanley's internal memo above, conflicts of interest seem to be present in the investment banking industry. In fact, the stock market crash of 2000-2001 triggered concerns that investors were misled by analysts' biased research. The critics were able to recognise a distinct lack of independence in affiliated analysts behaviour and questionable objectivity in affiliated analysts' research. These findings resulted in changes in US regulatory environment beginning in July 2002. Finally, in December 2002, the Global Analyst Research Settlements involving ten US banks (later twelve), the SEC, the NYSE, the NASD and the New York Attorney General were formally announced. The Settlements led to increased disclosure requirements, organisational changes inside investment banks and penalties paid by the ten largest investment banks in the US.

The stock market crash resulted in regulatory changes in Europe as well. Commission of the European Community summoned a working-group to examine the matter. As a result, new directives were enacted that summoned similar regulatory changes and disclosure requirements as the Settlements in the US. In addition, guidelines for self regulatory actions and best practices were issued.

The Global Research Analyst Settlements spurred numerous studies in the US aimed to verify whether investment bank affiliated analysts had issued biased recommendations compared to unaffiliated analysts. Also the market reactions to the affiliated analysts' recommendations were studied. However, the main body of these studies concentrated on companies issuing new securities (for example Michaely and Womack, 1999, Lin and McNichols, 1998 and Lungqvist, Marston and Wilhelm, 2003) and, to the best of my knowledge, there are only couple of studies concerning merger and acquisition (M&A) situations; Kolasinski and

Kothari working paper (2007) and Bradley et al. (2007) study. Results on the conflicts of interest are mixed in the two papers mentioned.

Nevertheless, investment banking relationship generates conflicts of interest in M&A situations as well. Bradley et al. (2007) argue that the conflicts of interest inherent to M&A advisors may differ from IPO and SEO underwriters because of different fee structures[1] and higher deal frequencies compared to the underwriter context. In addition, Bradley et al. (2007) report that aggregate fees for M&A deals have exceeded equity issuance fees for every year for the past decade thus making the M&A deals an important source of income for the investment banks. Additionally, the probability of gaining repetition business is obviously larger in M&A context than in IPO markets, which adds a competition perspective in every implemented M&A deal. Due to the fact that shares of acquiring firms are mostly public before the transactions, studying M&A situations enables one to compare the recommendations issued ex-ante and ex-post the transactions which is not possible for IPO situations. This enables one to detect the possible strategic changes in affiliated analysts' recommendations surrounding the M&A deal announcement.

Another source of conflicts of interest lays in the compensation structure of sell-side equity research analysts. Before the regulation changes, it was common for a significant part of the analysts pay to be related to the "helpfulness" to the bank's corporate finance departments in finalising and winning corporate finance deals. In addition, superior quality of research and positive coverage from high reputation analysts are important competitive advantages for investment banks, since the importance of positive analyst recommendations to the performance of a stock has been proven in several studies stating that analysts' recommendations have a significant impact on stock prices (for example, Panchenko 2007; Barber, Lehavy, McNichols and Trueman, 2001).

Finally, it is a commonly known fact that M&A deals generally provide positive excess returns for target shareholders. According to Bradley et al. (2007), this creates a possible

[1] According to McLaughlin (1990), investment bank fees concerning M&A deals are substantially contingent on offer outcome, giving investment banks significant incentives to complete a transaction. Further, provisions in target-firm contracts motivate bankers to seek a high price. I will discuss the subject more in detail in section 2.3.1.

channel for affiliated analysts to generate value for their client investors by recognising these targets ex-ante. At the same time, affiliated analysts are able to enhance their reputation by exploiting inside information gathered via affiliation.

1.2. Research objective and questions

This thesis concentrates on studying conflicts of interests between investment banks, affiliated analysts, client firms, client firms' shareholders and investing public in merger and acquisition situations via affiliated and unaffiliated analysts' recommendations issued surrounding M&A deal announcements. I aim to describe and specify the origins and outcomes of conflicts of interest between separate parties and to find out whether there is empirical evidence on any of these conflicts of interests, i.e. is there some kind of a consistent and common bias in affiliated analysts' recommendations. M&A advisor relationship is used as a proxy for analyst affiliation. Table 1 presents my research questions.

TABLE 1.1 Research questions

Research Questions
1) What kinds of conflicts of interest are present in M&A situations?
2) How are the potential conflicts of interest manifested in affiliated analysts' recommendations about the acquirer?
3) Does the form of payment have an effect on affiliated analysts' recommendations about the acquirer?
4) Does the report timing in relation to the M&A deal announcement have an effect on the recommendation level?
5) Did the regulatory environment changes in Europe affect affiliated analysts' recommendations about the acquirer?
6) Is the potential bias in affiliated analysts' recommendations different during high M&A volume periods or bull markets?

1.3. Contribution and key results

Previous literature has mostly studied analyst affiliation and investment banking relationship in relation to security issuance cases. In addition, there is a vast literature about whether different employers, such as investment banks and independent brokerage houses, have an effect on analyst recommendations. These studies do not specify any special investment banking relationship but use the analysts' employer as a proxy of conflicts of interest. To the best of my knowledge, and according to Bradley et al. (2007), there are only two studies (Kolasinski and Kothari, 2007 and Bradley et al., 2007) that concentrate on analyst affiliation, conflicts of interest and investment banking relationship in M&A situations.

Kolasinski and Kothari (2007) divide analyst affiliation to target- and acquirer-advisor related affiliation, as I do in my thesis. In addition, they divide their hypothesis according to the form of payment and analyst report publication time in relation to the M&A deal announcement. However, Kolasinski and Kothari (2007) consider the report publication timing merely as whether the recommendation has been published after the M&A deal announcement or not. Bradley et al. (2007) in turn divide the time surrounding M&A deal announcement to quarters as I do, but perform their regression analysis similarly to Kolasinski and Kothari (2007) only on time periods before and after M&A deal announcement.

In addition, Bradley et al. (2007) do not divide analyst affiliation to target- and acquirer-affiliation but define the affiliated analyst merely as an analyst whose employer is advising either one of the companies participating in the M&A deal. Hence my thesis is the first study that examines whether the recommendation issuance quarter has an effect on affiliated analyst's recommendations and how the relationship with either target or acquirer firm affects the analysts' recommendations during different quarters. My results suggest that the report issuance quarter might have an effect on both recommendation levels and recommendation revisions.

Kolasinski and Kothari (2007) studied changes in relative recommendations, i.e. recommendation revisions. Bradley et al. (2007) in turn study relative recommendations. However, it is argued, (Agrawal and Chen, 2007) that it is the retail investors whose investment decisions are mostly affected by the absolute recommendation levels and that

sophisticated institutional investors do not react to the absolute recommendation levels but follow more the recommendation revisions. Thus the possible bias in absolute recommendation levels might be less likely detected. Hence in addition to studying the revisions, I study also absolute recommendation levels and relative recommendations. The main findings in my thesis are related to the absolute recommendation levels and I find evidence that even though the affiliated analysts' revisions do not seem to deviate statistically much from those of unaffiliated analysts, their absolute recommendation levels deviate from unaffiliated analysts' recommendation levels. In addition, my results suggest that the direction of the deviation is dependent on the advisor relationship. Target-affiliated analysts tend to issue lower level recommendations and acquirer-affiliated analysts higher level recommendations about the acquirer's stock. This result on absolute recommendation levels has not been reported by either Bradley et al. (2007) or Kolasinski and Kothari (2007) but confirms the results on recommendation revisions reported by Kolasinski and Kothari (2007).

I present and study additional hypotheses to both Kolasinski and Kothari (2007) and Bradley et al. (2007) studies. Firstly, I study the effects of the European regulatory changes and increased investment bank competition during high M&A deal volume periods. Secondly, I use variable for Top 15 banks to proxy for analyst and bank reputation effects. Thirdly, I include a hypothesis considering target-affiliated analysts' behaviour in hostile deals, since according to McLaughlin (1990, 1992) investment bank fee contracts encourage banks to increase the deal value and completion probability also in hostile deals. Finally, a hypothesis of analysts' own ambitions and reputation building is also included in my thesis since analyst reputation is seen as a key factor in analyst compensation. Affiliated analysts may garner inside information about the M&A deal before its publication which could help them to issue more precise recommendations and to enhance their reputation.

I find evidence that both unaffiliated and affiliated analysts' recommendations issued after the European regulation changes in 2003 are of lower level than the recommendations issued before the recommendation changes which is in line with Kadan et al. (2008) findings on US data. However, I have a differing finding considering the recommendation scales. In the US study, the information content of analysts' recommendations has diminished after the regulation changes since analysts converted their recommendation scale from five categories to three following the regulation changes in year 2002. Similar effect can not be seen in my data since European analysts still use five category recommendation scales. This finding is

interesting since the new regulatory frameworks are quite similar in both continents. Results for my hypotheses related to high M&A volume period suggest that other than affiliated analysts issue higher recommendations during high M&A volume market periods. Supporting evidence for hypotheses considering bank and analyst reputation and hostile deals is not provided.

In addition, I find results suggesting that both acquirer- and target-affiliated analysts issue lower level recommendations prior the deal announcement especially in stock financed deals. Hence evidence suggesting that acquirer-affiliated analysts may aim to improve their own reputation is provided. However, my results for analysts' report timing in relation to the M&A deal announcement suggest that the acquirer-affiliated analysts' lower level recommendations are concentrated on quarters -3Q and -2Q prior the deal announcement and recommendations issued during other preceding quarters are of a higher level. Thus my results suggest that acquirer-affiliated analysts issue higher level recommendations closer to the deal announcement date which provides evidence for acquirer-affiliated analysts' strategic recommendation behaviour even though the results remain mixed. Likewise evidence for target-affiliated analysts' strategic recommendation behaviour is provided.

In addition to the issues discussed above, I present a comprehensive review on the motives and reasons behind conflicts of interest in M&A deals. The combination of investment banking fees and new regulations into the other M&A related conflicts of interest issues is unique compared to the existing literature.

1.4. Definition of key concepts

1.4.1. Analyst affiliation and sell-side analyst

I divide analyst affiliation to target- and acquirer-affiliation according to the advisor relationship. Analyst affiliation refers to a situation where a sell-side analyst, employed by an investment bank acting as an advisor in an M&A deal, gives recommendations on the investment bank's client or the opposite party in the deal. Thus the analyst is commenting on a company that is participating in an M&A deal in which his or her employer is acting as an advisor. For example, an analyst is target-affiliated if his employer is acting as the target's advisor in an M&A deal and the analyst issues a recommendation about the acquirer company's stock.

Sell-side analysts are analysts who typically work for investment banks, brokerage houses or independent research companies and analyse firms in order to provide information for their clients. The tasks of a sell-side analyst consist of providing accurate, reliable, current and timely forecasts and recommendations about the firms he or she is following. Buy-side analysts in turn work for institutional investors and target their analysis in finding firms to invest in and their analyses are aimed for internal use only. This thesis concentrates on sell-side analysts, and the term "analyst" is therefore used to designate a sell-side analyst in the remainder of the thesis.

1.4.2. Analyst opinion level

This thesis concentrates on reported recommendation levels and revisions in stead of forecasts about the company's EPS or other financial figures. The recommendation levels are classified as follows. Analysts issue usually recommendations in five categories in my sample: "Strong buy", "Buy", "Hold", "Sell" and "Strong sell". These categories are converted into numbers, so that "Strong buy" is number 5 and "Strong sell" is number 1. The term *"positive"* or *"optimistic"* recommendation is used for categories "Strong buy" and "Buy" and *"negative"* or *"pessimistic"* recommendation refers to categories "Strong sell" and "Sell" in this thesis.

1.4.3. Conflicts of interest

There are several definitions to the term "conflicts of interest". Some sources narrow conflicts of interest down to situations where one party is in a position of trust or has fiduciary duties. For example, West's Encyclopaedia of American Laws, defines conflicts of interest as "A term used to describe the situation in which a public official or fiduciary who, contrary to the obligation and absolute duty to act for the benefit of the public or a designed individual, exploits the relationship for personal benefit, typically pecuniary."

However, conflicts of interest are present in situations where there is no such absolute duty to act for the benefit of certain beneficiary, and another definition of conflicts of interest can be found from Wikipedia, that says the following: "A conflict of interest rises from a situation where professional or corporation (private or governmental) is in a position to exploit a professional or official capacity in some way to their personal or corporate benefit." Mehran and Stulz (2006), define conflicts of interest more loosely, and according to them conflicts of interest exist when a party to a transaction could possibly take gains by taking actions that are harmful to the other party in that transaction.

Aforementioned definitions are similar in that all of them define conflicts of interest as a situation rising from the possibility of other party to take a direct gain by taking actions that have an adverse effect on the other party. Another relating factor in the definitions above is that the other party is defined as being able to gain from having relatively more information than the other party. Thus one reason behind conflicts of interest is asymmetry of information.

According to Mehdan and Stulz (2006), the main reason behind conflicts of interest in transactions involving financial institutions is information asymmetry. In many transactions financial institutions are better informed than their customers. The asymmetry of information is a fertile ground for conflicts of interest since whenever two parties transact, each party tries to maximise its gain from the transaction. Mehdan and Stulz (2006) argue, that when both parties have full information about the attributes of the good being transacted, when that information is fully available and when contracting is costless, there is no room for conflicts of interest. In the absence of full information, verifiability and costless contracting, conflicts of interest are omnipresent.

However, if the buyer is rational, she can perceive the seller's objective to benefit form the transaction and thus the buyer will enter the transaction only at a price that is advantageous enough to cover the risks associated with conflicts of interest. As a result, the seller, or at the situation of financial situations, the service provider ends up bearing the costs of conflicts of interest if the buyers are rational. Thus it can be stated that conflicts of interest entail indirect costs to the financial institutions and that the conflicts of interest generate incentives for financial institutions to reduce their impact on transaction as long as it is cost effective to do so.

With regard to the numerous studies written on the subject, it can be stated that the presence of conflicts of interest in the investment banking world is a well known fact. However, there is no consensus view on whether conflicts of interest have a systematic adverse impact on the customers of financial institutions. Furthermore, Mehran and Stulz (2006) argue, that there are important factors that mitigate the impact of conflicts of interest and that it is possible for financial institutions' customers to benefit from the existence of such conflicts.

In previous studies, see for example Kolasinski and Kothari (2007), the investment banking advisor relationship is used as a proxy for analyst conflict of interest. I use the same proxy in my thesis.

1.5. Limitations of the study

My access to limited amount of affiliated analysts' recommendations deteriorates the statistical power of my results. In addition, the fact that some analyst recommendations might be altered after their original issuance might cause bias in the results (see section 4.1.2.). Additionally, some results may result from selection bias in addition to affiliation which makes it difficult to draw conclusions about the results. For example, target-affiliated analysts might be selected due to their negative priors about the acquirer which results in negative recommendations surrounding the M&A deal announcement. The results on M&A high volume periods and Bull market periods need to be interpreted with caution since the time periods are overlapping.

1.6. Structure of the study

The remainder of the study is structured as follows. Chapter 2 presents literature review. I begin the literature review by discussing the shareholder returns related to M&A deals. Analysts' recommendations and conflicts of interest in them are discussed next. I conclude my literature review by discussing investment banking relationship, conflicts of interest and regulation changes. Chapter 3 presents my hypotheses and chapter 4 describes my data, methodology and variables. My results are presented in chapter 5, first for absolute recommendation levels, then for relative recommendations and finally for recommendation revisions. Chapter 6 presents the summary of my thesis and concludes. Also suggestions for future research are presented in section 6.

2. Literature review

2.1. Shareholder returns after M&A announcement

I start by presenting a short insight into M&A value generation literature to summarise the common shareholder return effects of M&A announcements. The literature is presented to enlighten the background of investment bank motives for generating biased research. As can be seen from the sections 2.1.1 and 2.1.2., M&A announcements lead often to acquiring firm share value deterioration, which creates a situation where issuing biased research can be seen as favourable to an acquirer-client.

Mergers and acquisitions represent substantial reallocations of resources within and across industries. According to Andrade et al. (2001), this reallocation of resources provides firms a rare possibility to grow massively within a few months. Measuring the value creation or destruction and determining how this incremental value is distributed among target and acquirer shareholders has been the central objectives of recent merger research.

2.1.1. Short-term announcement returns

In a market that is efficient with respect to public information, share prices should adjust quickly to reflect all relevant information. Thus it can be assumed that the entire wealth effect of a merger or an acquisition should be incorporated into stock prices by the time the uncertainty about the completion of the deal has resolved, i.e. at the time of deal completion. As a result, there exists a wide range of studies measuring the short-term returns on stock prices for the merger participants. According to Andrade et al. (2001), the most statistically reliable evidence on whether mergers or acquisitions create value for shareholders can be seen in traditional short-window event studies, where the average stock market reaction at merger announcement is used as a measure of value creation or destruction.

According to the main body of the studies concentrating on the short-term returns surrounding the announcement period, target shareholders seem to be clear winners in merger and acquisition transactions. For example, according to Andrade et al., (2001) the average three day abnormal return for target shareholders is 16 percent. This abnormal return is remarkably stable over time and industries in their sample.

The evidence for acquiring firm shareholders is not as rosy. In Andrade et al (2001) sample, the average abnormal return is -0,7 percent for the shorter time period (-1,+1) and -3.8 percent for the longer (-20, closing date). Although the results are not statistically significant, they are in line with the previous research that has concluded that the acquirer shareholders seem to be subsidising the merger and acquisition deals. As a whole, mergers seem to generate value in Andrade et al. (2001) sample, since combined firm returns are positive following mergers and acquisitions, but the main gain seems to accumulate to the target shareholders. This is in line with previous studies as well.

One explanation for target shareholders' abnormal returns exceeding acquirer shareholders' returns may rise from the fact that mergers are carried out due to several different motives. Mergers resulting from managers' empire-building behaviour may result in negative acquirer shareholder abnormal returns and Andrade et al. (2001) argue that if mergers could be sorted by true underlying motives, it might be that those which are undertaken for good reasons truly benefit acquirer shareholders as well but these gains are cancelled out by mergers undertaken for less benign reasons. Mitchell and Lehn (1990) provide similar results and argue that the

unsuccessful mergers are finally punished in the takeover market as well. These differing motives behind mergers apply for acquisition situations as well and result in conflicts of interest, most obvious one being the conflict between acquirer shareholders' and managements' best interest in a merger motivated by dubious reasons.

However, the combination of different mediums of payment biases the picture. In particular, mergers and acquisitions financed with stock have different value effects from purely cash financed mergers. According to Andrade et al. (2001), this is due to the fact that by financing a deal with stock, the acquiring company implicitly performs an equity issue in addition to the merger deal. On average, equity issues signal that a company sees its stock overvalued which causes its stock price to decline around -2 or -3 percents according to Andrade et al. (2001). This makes it important to separate the payment types when measuring returns to acquirer shareholders.

When mergers are divided according to payment types, Andrade et al. (2001) find in their study that the negative announcement period stock market reaction for acquiring firms is limited to those using stock financing in their deal. They find that acquiring firms that use at least some stock to finance the deal have reliably negative abnormal returns of -1,5 percent, while acquirers that refrain from equity financing have average abnormal returns of 0,4 percent. In addition, in Andrade et al. (2001) study, also target shareholders gain higher abnormal returns when no stock financing is used. They find also that the combined average abnormal returns for stock financed mergers are zero where as the combined three-day abnormal return for cash deals is reliably positive at 3,6 percent.

The difference in abnormal shareholder returns stemming from the usage of stock financing creates a source of conflicts of interest. Since the use of stock as a medium of payment results in such a clear difference in shareholder returns, providing positive analyst coverage for acquirer-clients surrounding stock financed merger or acquisition deals might create a useful competitive advantage for investment banks.

The fact that acquirer shareholders seem to be suffering from, if not always negative, at least remarkably smaller positive abnormal returns compared to the target shareholders, suggests that it might be advantageous for investment banks advising acquirers in merger and acquisition situations to provide positively biased research. This could lead to the deal to

appear better than average if the biased analyst recommendations were able to upgrade acquirer stock price. This could make the deal more probably accepted by both target and acquirer shareholders, which in turn would give higher probability of closing the deal and provide more reliable fee collection for the investment bank. In addition, affiliated analysts garner inside information about the deal prior its announcement which enables them to anticipate the potential forthcoming acquirer share price deterioration and enhance their reputation for providing accurate research.

2.1.2. Long-term returns

Even though the traditional wisdom for many years stated that the announcement period stock price reaction should fully reflect the information effect of the deal, several studies concerning long-term returns for combined firms cast doubt on the short-term event window studies. According to these studies, investors systematically fail to assess quickly the full impact of corporate announcements. In fact, according to Andrade et al. (2001), some authors find that the long-term negative drift in acquiring firm stock prices overpowers the short-run positive effects of the deal, making the total wealth effect negative.

Again, firms using stock financing suffer from more negative returns than firms using merely cash in their deals. For example, according to Loughran and Vijh (1997), who calculate separately abnormal returns for stock and cash financed deals over the time period of 1970-1989, find that over time period of five years after the merger, acquiring firms using stock financing have abnormal returns of -24,2 percent while the abnormal return for cash financed deals is 18,5 percent. Another grouping generating different returns is book-to-market equity ratio. Rau and Vermaelen (1998) calculate high book-to-market firms three-year abnormal returns of -17,3 percent for low book-to-market firms and 7,6 percent for high book-to-market firms for the period of 1980-1991.

To sum up, according to Andrade et al. (2001) and other studies, mergers generate positive shareholder value that seems to be allocated mainly to the target shareholders. This uneven allocation creates a situation where positively biased analyst research could benefit an acquirer-client if analyst's recommendations have a positive effect on acquirer's share price.

2.2. Analyst recommendations and conflicts of interest

The previous literature concerning affiliated analysts and conflicts of interest usually discusses two questions. Firstly, do affiliated analysts issue more positive recommendations compared to unaffiliated analysts and secondly, how does the performance of affiliated analysts' recommendations differ from the performance of unaffiliated analysts' recommendations. I begin this section with a short description of analysts' recommendations and the performance of recommended stocks. Both market reactions to unaffiliated and affiliated analysts' recommendations are discussed to get an idea about the investor's perceptions about the possible bias in affiliated analysts' recommendations. Next, the origins of analyst conflicts of interest are described shortly to draw attention to the analysts' likely incentives to bias their research. This section is concluded with a discussion about analyst compensation and the importance of analyst reputation in order to view the possible conflicts of interest inherent in analyst compensation structures.

2.2.1. Analyst recommendations and performance

This section summarises findings on the analysts' recommendations and their effect on stock return performance. In addition, differences in market reactions to affiliated and unaffiliated analysts' recommendations are discussed.

Investors utilise a variety of information sources when making investment decisions. One relied source is the advice and recommendations contained in analysts' reports. Morgan and Stocken (1998) find that, according to SRI International (1987), 66.2 percent of individual investors rate the analysts' opinions "most important" when making investment decisions. In addition, 64 percent of professional investors regard their own firm analysts' opinions valuable and 52 percent view other analyst opinions "most important" as well. Thus it can be said that analyst opinions and recommendations seem to make a difference.

According to several studies (see for example Womack (1996) and Jegadeesh and Kim (2006)) analysts are reluctant to issue "Sell" recommendations. In fact, "Sell" recommendations form only a few percents of the total amount of reported recommendations. Interestingly, Jegadeesh and Kim (2006) find that "Sell" recommendations are about four to

five times as frequent in other G7 countries than in US. They conclude that analysts in US seem to face the largest conflicts of interest.

There are quite a few reasons for analyst optimism, one of which is that optimistic analysts have better career prospects than those who issue negative recommendations. Another explanation is that analysts experience larger costs in issuing "Sell" recommendations. These costs might result from the danger of losing investment banking clients after pessimistic recommendations, and there are several studies arguing that affiliated analysts issue more optimistic research than unaffiliated (see for example Agrawal and Chen (2007), Michaely and Womack (1999) and Lin and McNichols (1998)). Putting the investment banking relationship related reasons aside, issuing "Sell" recommendations presents more risk to analysts since "Sell" recommendations are less frequent and thus more visible.

According to Womack (1996), an incorrect judgement of a "Sell" recommendation is likely to be more costly for an analyst's reputation than an incorrect "Buy" recommendation made when other analysts are more likely to make the same "Buy" recommendation. Thus the greater implicit costs of issuing a "Sell" recommendation might explain the larger magnitude of abnormal returns at and after "Sell" recommendations. Consistent with Womack (1996) discussion, Agrawal and Chen (2007) find that investors perceive an analyst to be more credible if he is willing to voice an unfavourable opinion on a stock despite of greater pressures to be optimistic. Analysts' tendency to issue positive recommendations is a well known fact among sophisticated institutional investors who more often follow analysts' recommendation changes in stead of exact recommendation levels.

The usefulness of analyst recommendations has been an interesting topic of debate among practitioners and academicians since the early beginning of analysts' trade. In an efficient market, analyst stock picks should not perform better than a relevant market index, but empirical studies (see for example Womack 1996) have found a considerable effect on stocks recommended by analysts, indicative on the perceived value of these recommendations.

Existing literature finds that despite the inherent positive biases, analyst recommendations and recommendation revisions add value to investors. For example, Agrawal and Chen (2007) and Jegadeesh and Kim (2006) find that recommendation revisions have large effects on stock prices. For example, according to Agrawal and Chen (2007), when a stock is added to the

strong buy list, it experiences a mean abnormal return of about 2 percent over two-day revision period. Womack (1996) finds similar results. He argues that three-day recommendation period returns are large and in the direction forecasted by the analysts. Both studies report also that downgrades have even larger effects. For example, Agrawal and Chen (2007) find that the two-day mean abnormal return around the drop from strong buy list is -4 percent. In addition, according to Womack (1996), stock prices experience a considerable post-recommendation drift as well.

In addition, several studies (see for example Agrawal and Chen (2007), Lin and McNichols (1998) and Michaely and Womack (1999)) find dissimilarities between the market reactions to affiliated and unaffiliated analysts' recommendations. Clarke et al. (2004) find that while analysts at large investment banks provide more positive recommendations than analysts at other financial institutions, their recommendations are viewed more informative by the market. Abnormal returns following upgrades (downgrades) are significantly more positive (negative) for analysts at large investment banks. In addition, Bradley et al. (2007) find that the reactions in stock prices are more positive for affiliated than unaffiliated analysts. However, Bradley et al. (2007) conclude that the market has not effectively discounted for the bias in affiliated analysts' recommendations in stead of viewing affiliated recommendations as more accurate.

On the other hand, when Bradley et al. (2007) expand the time window to (-10,+10) days, they find that unaffiliated analysts' "Buy" recommendations outperform affiliated analysts' recommendations by 2,4 percent. In addition, Michaely and Womack (1999) find that the market does not recognise the full extent of the bias in affiliated analysts' recommendations and that affiliated analysts' recommendations are, in the long-run, inferior to recommendations by non-underwriters. They also show that stocks that underwriter analysts recommend perform more poorly than "Buy" recommendations by unaffiliated brokers prior to, at the time of and subsequent to the recommendation date.

Alternatively, there are studies suggesting that markets are able to discount for the possible bias entailed in affiliated analyst's recommendations. Agrawal and Chen (2007) study both short-term trading volumes and market returns. They find that the short-term reactions of both stock prices and trading volumes to recommendation upgrades vary negatively with the magnitude of potential investment banking or brokerage conflicts faced by the analysts. For

downgrades, conflict severity varies negatively with the short-term stock price reaction and positively with the short-term trading volume impact. These findings suggest that even though the level of analysts' stock recommendations is positively related to the magnitude of conflicts of interest, the market recognises analyst conflicts and properly discounts analyst opinions. In addition, Michaely and Womack (1999) find that the size adjusted positive excess return for underwriter affiliated analysts' "Buy" recommendations on IPO stocks at the recommendation date is smaller than for the "Buy" recommendations of unaffiliated analysts.

Some studies find differing reactions for affiliated analysts' up- and downgrades. Barber et al. (2007), argue that investment bank "Hold" and "Sell" recommendations outperform those of independent research firms by 1.8 basis points per day on average whereas investment bank "Buy" recommendations underperform relative to the independent research firms' "Buy" recommendations. In addition, Lin and McNichols (1998) find that announcement returns for lead underwriter "Hold" recommendations are significantly more negative than unaffiliated "Hold" recommendations but find no difference in the announcement period returns to lead and unaffiliated analysts "Strong buy" and "Buy" recommendations.

For longer time period returns, the results are mixed as well. For example, a study by Barber et al. (2001) suggests that following analysts' recommendations would have been profitable. On the other hand, a study by the same group of researchers, done by a couple of years later, (Barber et al. (2003)) suggests that during a different time period (2000 and 2001), adhering to the analysts' recommendations would have been "disastrous". What is more, they show that the stocks least preferred by analysts outperformed the most favoured by 20%. In addition, Michaely and Womack (1999) find that long-run post-recommendation performance of underwriter analyst recommendations on IPO stocks is inferior to unaffiliated analysts' recommendations.

Agrawal and Chen (2007) find no evidence that one-year investment performance of recommendation revisions is related to the magnitude of analyst conflicts, either with upgrades or downgrades. Bradley et al. (2007) have similar findings suggesting that following affiliated analysts' research does not make investors significantly worse of than following unaffiliated analysts' research. In addition, Lin and McNichols (1998) find no difference in the post-announcement performance of affiliated and unaffiliated analysts.

2.2.2. Origins of analysts' conflicts of interest

This section describes the possible origins for conflicts of interest related to analysts. Mehdan and Stulz (2006) argue that conflicts of interest between the corporate finance and research department stem from a situation where the investment bank gains from taking the analyst "over the wall", i.e. taken on board, in a corporate finance situation. By taking a company analyst aboard in preparing an M&A deal, the corporate finance sector gains access to analyst's information about the companies involved in the transaction. In turn, the analyst gains as she is able to garner inside information about the customer firm involved in the transaction which would not be possible otherwise. This increased knowledge might be transmitted to the market via analyst's recommendation, even though that should not happen. Thus crossing the wall might result in a better product for the consumers the investment bank's analyst services. On the other hand, crossing the wall might increase analysts' possibility to enhance her reputation by exploiting the information about the deal.

Several studies have found affiliated analysts' recommendations biased at least to some extent and analysts to a subject of investment banking and brokerage pressure. For example, Ljungqvist et al. (2007) argue, that analysts issue more optimistic recommendations when they are affiliated with investment banks that have existing relationship with the firm covered and when they work for banks with larger brokerage businesses. Thus there might be conflicts of interest between the analysts and their employer when the bank aims to gain business, investment banking fees and competitiveness by pressuring analysts to issue recommendations that benefit bank's corporate finance clients.

Some studies (see for example Ljungqvist et al. 2007 and Lim 2001) argue that analysts might bias their recommendations positively for their own advance, i.e. to stay in friendly terms with firm management. Insufficiently flattering research could result in a firm refusing to provide the analyst with timely information or access to senior management, undermining the analyst's ability to be an effective informational intermediary. This kind of behaviour would lead to similar results as selection bias hypotheses, where advisors are hired due to appropriate analyst opinions. According to Mehdan and Stulz (2006), analyst conflicts of interest are most likely to realise when the benefits for the analyst of not preserving her reputation are high enough. The benefits of biased recommendations increase when the deal

size increases since banking fees and analysts' bonuses are related to the deal size. Hence analysts may bias their recommendations more if the deal value is high.

On the other hand, there are several studies arguing that the analyst behaviour seems to be guided by careers concerns. For example, Irvine (2004) finds that analysts that build reputations for providing reliable, accurate and timely research and recommendations generate additional trading business for their brokerage firms. In addition, according to Kothari (2001), these honest and accurate analysts receive higher compensation. Hong and Kubic (2003) argue that these analysts are more likely to be hired by the most prestigious investment banks as well.

To conclude, analysts face a trade-off between generating revenues for their employer's brokerage and investment banking business and their private career concerns. While investment banking and brokerage pressure each could cause analysts to produce positively biased recommendations, biasing their research undermines their reputation with institutional clients who play a critical role in the formation of their reputation and ultimately, in the formation of their compensation.

2.2.3. Sell-side analysts' reputation and compensation

Before the Global Research Analyst Settlements on April 28, 2003, a significant portion of analysts' pay was based on their ability to generate revenues through service to investment banks' corporate finance department. According to Michaely and Womack (1999) study, analysts who help attract underwriting business may receive a portion of the fees or, more likely, bonuses that are two to four times those of analysts without underwriting contributions. Another major factor affecting the analysts' pay is perceived external reputation and according to Michaely and Womack (1999), being up-to-date and timely production of reports and estimates is of paramount importance with regard to analyst pay.

In addition, Groysberg et al. (2008) have studied analyst compensation by using more up to date data from a large financial institution and interviews on analyst compensation with research directors at several investment banks. They find that the analyst compensation is

positively related to five variables: ranking among the top analysts in an industry by Institutional Investor II ratings[2], covering a stock that generates investment banking business for the firm, being hired from a competitor rather than being home-grown, covering stocks with large trading volume and strong financial sector stock performance. Groysberg et al. (2008) find no evidence that earnings forecast accuracy or stock recommendation performance is related to compensation.

Groysberg et al. (2008) findings, that the economic magnitude of Institutional Investor II ratings on analyst's compensation is significant, are particularly interesting in the context of conflicts of interest. According to Groysberg et al. (2008), top rated analysts received 65 percent higher compensation than unrated peers. Analysts following investment banking client received 9-10 percent higher total compensation than analysts with no banking clients. In addition, an increase of 10 percent in trading volume of stocks covered resulted in a 1.8 percent change in total compensation. Additionally, one extra year of experience increases analyst compensation by 7-9 percent. Home-grown analysts in turn earn 13 percent less than analysts' hired form competing firms.

These findings suggest that analyst reputation is the most important factor in analyst compensation and thus a powerful counterforce in the conflicts of interest and biased recommendations issue. However, according to Groysberg et al. (2008), II ranking is viewed as a "winner-take-all" contest among analysts in a given industry. Only the analysts ranked among the top in their industry receive any compensation differential. The motivation of un-ranked and below top- ranked analysts is an interesting question that might leave some room to conflicts of interest resulting in biased research. In addition, due to the nature of Institutional Investor II rankings (see footnote 2), they are not clean from the effects of analysts' contributions to investment banking business and client firm relationships.

---

[2] II ratings, which have been available since 1972, are based on an annual survey of customers at the largest US institutions. The survey requests customers to vote for analysts who "have been the most helpful to you and your institution in researching US equities within last 12 months" and thus the rankings are a measure of analysts' overall effectiveness. Each analyst is ranked within an industry and the ranks are published in Institutional Investor magazine for roughly 80 industries. Since 1995, also more comprehensive data on rankings is sold to Wall Street research directors.

2.3. Investment banking relationship, conflicts of interest and regulation

In the framework of affiliated analysts, conflict of interest and investment banking, the previous literature is divided mainly into three different lines. One of these lines is the securities underwriting relationship and conflicts of interest rising from the situation where analysts aim to aid their employer in either gaining underwriting business or pleasing current bank clients. Another line of literature concentrates on comparing the recommendations published by investment bank and brokerage house employed analysts to recommendations published by analysts working in independent research houses. These studies do not necessarily specify any specific context or situation for the conflicts of interest but assume them to rise merely from analyst relation to different employers (e.g. Barber et al. 2007) or use quantitative measures of the magnify the potential conflicts of interest. For example, the importance of investment banking business to the bank may be measured by calculating the relative size of revenues generated from that line of business. The third, and according to Kolasinski and Kothari (2007) and Bradley et al. (2007), so far least studied, line is conflicts of interest in M&A context. Employer's brokerage business may also put an analyst under pressure to issue biased research. However, I do not discuss this line of conflicts of interest in my thesis.

A number of studies (e.g. Michaely and Womack (1999), Lin and McNichols (1998) and Dugar and Nathan (1995)) have focused on conflicts faced by analysts in context of existing underwriter relationship. Michaely and Womack (1999) results suggest that underwriter analysts' recommendations are positively biased and that the same investment banks' analysts make better recommendations when their employer is not acting as a lead underwriter. Thus Michaely and Womack (1999) argue that it is the bias related to the position of lead underwriter that drives their results, not the differing abilities of analysts. Lin and McNichols (1998) find that lead and co-underwriter analyst's growth forecasts and particularly their recommendations are more favourable than those made by unaffiliated analysts although their near-term earnings forecasts are generally not. However, their findings suggest that affiliated analysts strategically avoid "Sell" recommendations to maintain client relations.

My thesis concentrates on conflicts of interest in M&A situations and thus I discuss the literature concerning conflicts of interest in M&A context more thoroughly in section 2.3.2 .

My main references are Kolasinski and Kothari (2007) working paper that concentrate on finding evidence on conflicts of interest in both target and acquirer advisor affiliated analysts' recommendation changes in stock and cash deals, and an article by Bradley et al. (2007) that studies tender offers.

2.3.1. Investment bank role and fee-contracts in M&A context

One of the investment banks' most central tasks in M&A context is to alleviate information asymmetry between the firms participating in the deal. According to Kale et al. (2003) and McLaughlin (1990), financial advisors perform two distinct roles in takeovers. First, they help in identifying and/or structuring better mergers, i.e. mergers with higher synergistic gains. In this role, investment banks identify potential targets or bidders, evaluate stand-alone and combined values and propose methods for obtaining synergies. All of these activities produce information that makes hidden value more transparent and thus alleviates information asymmetries and reduces transaction costs. Second, financial advisors provide client firms with advice in strategic activities. These strategic activities include designing offers to ensure takeover success (bidder's advisor) and tactics aiming to increase takeover premium (target's advisor).

However, according to McLaughlin (1990), the investment bank's role is controversial in M&A situations due to the potential conflicts of interest that may arise between the bankers and their client firms. McLaughlin (1990) argues that investment banking contracts may include fee structures that create potential for conflicts of interest between bankers and client firms, particularly in offer evaluation, hostile offers and the deal price formation.

Investment banking fee contracts are complex and unique to each transaction, but according to McLaughlin (1990), some common features can be identified. Contract fees fall into three basic categories: fixed fees, shares-based fees and value-based fees. Fixed fees are independent on offer outcome and are used infrequently. Shares- and value-based fees, in contrast, are contingent on offer outcome. Shares-based fees are contingent only on the number of shares purchased and are usual in bidding-firm contracts. They are often step-functions of the number of shares purchased. Usually the first fee increase occurs at or above the percentage at which the bidding firm acquires voting control of the target. Value-based fees are contingent on both the number of shares acquired and the price paid, and are typically

used by target firms according to McLaughlin (1990). Value-based fees are paid only for a completed deal. Total-value fees are usually linear functions of deal value. In incremental-value-fee contract, an additional fee is paid only if an offer above a specified amount results in a transaction. The main findings of McLaughlin (1990) study are presented in table 2.

TABLE 2.1. Summary of major findings in McLaughlin (1990)

	Target firms	Acquirer firms
Contract Form	80 % of fee contingent on transaction value	80% of fee contingent on completion the transaction or on number of shares purchased
Potential Incentive problems	Conflicts of interest in offer evaluation	Conflicts of interest in offer evaluation
	Incentive to complete a transaction in hostile offers	No incentive to minimise price paid

Source: McLaughlin (1990)

Interestingly, McLaughlin (1990) finds that contract incentives in hostile offers are not usually focused on maintaining the target's independence. Even if the success of the original hostile bid results in payment of the smallest fee, investment bank's fees are often maximised if some transaction is completed. As discussed also in McLaughlin (1990), this might be caused by target management avoidance of creating conflicts of interest with shareholder value maximisation.

In addition to the findings presented above, McLaughlin (1990) finds also that fees increase with the value of the deal offer, although the increase is not proportional. This relation to the deal size may make the investment bank task related to offer valuation compromised, since higher deal value results in higher fees. In addition, fees vary widely for offers of comparable value and are substantially higher for completed transaction, which applies usually for the target-firms' fee contracts as well. These findings in McLaughlin (1990) suggest in my opinion that the fee contracts create incentives for investment banks to aim for completed transactions that have as high deal value as possible.

As can be seen from the findings in McLaughlin (1990), the investment banking contracts entail possible conflicts of interest. Firstly, bidding-firm contracts provide no incentives for the investment bank to minimise the price paid since fees are mostly contingent on deal

completion and value. In addition, a higher offer increases the probability of deal closure. Secondly, target-firm contracts in hostile offers frequently contain incentives for the target firm's banker to complete a hostile transaction.

However, according to McLaughlin (1992) and Kale et al. (2003), investment banks have strong incentives to obtain a high reputation because they need to sell their services repeatedly in the markets. McLaughlin (1992) argues that reputation building concerns mitigate the incentives for conflicts of interest inherent in fee contracts. On the other hand, investment banks may use positively biased analyst research as a means of both pleasing clients and acquiring more M&A business. Even though this strategic use of biased analyst recommendations alleviates conflicts of interest between the bank and its client, they are not erased completely. In stead, they are transferred to the relationship between the client firm and investors.

Finally, according to Bodnaruk et al. (2007), advisor banks have access to insider information about the target's characteristics, the bidder's intentions and the terms of the deal. This information can be directly exploited in the market since there is no regulation preventing advisor banks from having stakes in target companies. Having a stake in the target creates an incentive to maximise the deal price and the probability of deal completion. This is not in the best interest of acquirer firm and thus having a stake in a target may induce the bank to sacrifice the interest of acquirer-client. In addition, maximised deal price maximises bank's fees as well as described earlier in this section.

Bodnaruk et al. (2007) show, that the presence of bidder-advisor owners makes it 45 percentage points more likely that a firm will become a takeover target. Also the probability of deal success is heightened when there is a bidder-advisor owner presence. Their findings show also that a trading strategy conditional on the advisor's stake delivers a net-of-risk performance of 4.08 percent per month. This cannot be replicated by using publicly available information.

Bodnaruk et al. (2007) findings suggest that the advisory bank greatly benefits from the capital gains accruing from the deal. Bodnaruk et al. (2007) find also that advisory-induced deals do not appear to be good fit for the acquirers. Indeed, when compared to firms where acquirer-advisor has no stake in, the acquirer-advisor owned firms tend to be overvalued for

over 10 percents. In addition, these deals have also lower post-merger profitability, and the acquirers taking part are usually less experienced than the average bidder in the M&A market.

Bodnaruk et al. (2007) conclude that advisors do take advantage of their privileged position, not only by acquiring stakes in the deals on which they advise but also by directly affecting the outcome of the deal, increasing its probability of success. These findings show that the conflicts of interests can rise from issues purely related with the bank's self-interests as well.

2.3.2. Conflicts of interest in M&A context

I start this section by distinguishing different settings of conflicts of interest inherent in M&A situations. I then continue by discussing the studies of Kolasinski and Kothari (2007) and Bradley et al (2007) which are my main references.

Economic theory has presented several motives for M&A deals and each of these motives entails a different setting of conflicts of interest. Efficiency related reasons for M&A often relate to creating synergies via, for example, economies of scale. Growth related motives include attempts to create market power or diversify through M&A activities. Growth and efficiency related motives usually result in joint interest of both investment bank and the acquirer and target shareholders to close the deal. However, the situation might not be in the best interest of target management, which creates conflict of interest between them and their shareholders. Acquirer management's desire to grow their business leads to M&A deals as well. If this desire stems from a fixation to over-expand the business, the deals done are not in the best interest of acquirer shareholders.

The M&A market is also called as the "market for corporate control" which refers to a situation where other companies in the market notice a company's management is incompetent and thus aim to replace it by buying the company. Obviously, this commonly leads to hostile acquisition situations, where it is in the interest of the acquirer management and its advisors to close the deal whereas the target management wants the opposite. These situations create possible conflict of interest between the target management and the advising bank. In addition, target-management's interests conflicts also with target's shareholders.
According to Mitchell and Mulherin (1996), mergers appear in waves and cluster within industries. In addition, according to Andrade et al. (2001), industries tend to restructure and

consolidate in concentrated periods of time and these restructurings occur suddenly and are hard to predict. Based on these findings, Andrade et al. (2001) argue that mergers might occur as a reaction to a certain shock in an industry. They find that deregulation is the most potential industry shock to explain for increased merger activity.

The fact that merger activity is clustered within time and industries might generate a conflict of interest between the advisor banks and investing public. By knowing that mergers might cluster and appear in waves, the banks realise that at certain times there are more M&A business and - revenues to be gained than in the normal market situation. This might encourage investment banks to attempt to obtain as many deals as possible during these times of increased merger activity, which would result in increased competition. One result of the increased competition might be that the investment banks' incentives to close M&A deals would include improving their reputation and status in the eyes of potential new clients. This might result in giving biased recommendations for clients' stock to make the deals appear better than they truly are.

In addition to the different motives, also different forms of payment generate conflicts of interest in an M&A situation, as discussed by Kolasinski and Kothari (2007) as well. The acquirer may use both its own stock and cash as a form of payment and a mixture of the two can be used as well. The medium of payment creates different settings for conflicts of interest between the deal related shareholders and the other investment society, since the stock of the acquiring firm becomes a medium of payment to the deal related shareholders and their companies.

In a stock deal, it is in the interest of the acquirer and its shareholders to get as high as possible share price prior to the setting of the exchange ratio. This would minimise the amount of shares paid to the target's shareholders. Obviously, the target's shareholders have the opposite goal; they wish the acquirer's share to be in its lows at the time the ratio is decided to get as high exchange ratio as possible. In a cash deal the stock price plays a smaller role since the stock is not used as a medium of payment.

Kolasinski and Kothari (2007) obtain M&A transaction data for years 1993 to 2001 and their data consists of statutory mergers and acquisitions of assets. Kolasinski and Kothari (2007) divide their hypotheses according to analyst affiliation, report timing and the form of

payment. They argue that acquirer-affiliated analysts are overly positive about acquirer, and that target-affiliated analysts are overly positive about the target, in all time windows surrounding the M&A announcement. In addition, acquirer-affiliated analysts are assumed to be pessimistic about the target in all time windows. However, Kolasinski and Kothari (2007) argue that target-affiliated analysts may change their views about the acquirer during the acquisition process in stock financed deals. Kolasinski and Kothari (2007) hypotheses are summarized in table 2.2 next page.

TABLE 2.2. Hypotheses and motives behind them as discussed in Kolasinski and Kothari (2007)

Analyst Affiliation	Analyst Report on	Deal Type	Timing of Report	Prediction	Gain for client firm	Gain for the bank
Acquirer	Acquirer	Cash	Anytime	Optimism	Increase the chances of shareholder approval	Increased chance of deal closing & collecting fees
					Stock price appreciation impacts positively on client managements compensation	More deals from grateful managers
Target	Acquirer	Cash	Anytime	Indeterminate/ Pessimism		
Acquirer	Acquirer	Stock	Before Exchange ratio set	Optimism	Higher value of acquisition currency, better terms for the deal	Higher fees for the bank
					Increased chances of shareholder approval	Increased chance of deal closing & collecting fees
Acquirer	Acquirer	Stock	After Exchange ratio set	Optimism	Stock price appreciation impacts positively on client managements compensation	More deals from grateful managers
Target	Acquirer	Stock	Before Exchange ratio set	Pessimism	Maximise the number of acquirer shares received as a payment	Eventually maximised deal price & fees
Target	Acquirer	Stock	After Exchange ratio set	Optimism	Maximise the deal price	Maximise fees, Business from other future targets
					Increase chances of acquirer shareholder approval	Increased chance of deal closing & collecting fees
Target	Target		Anytime	Optimism	Higher deal price	Higher fees
Acquirer	Target		Anytime	Pessimism	Lower deal price, sweeter terms	More deals from grateful managers

Kolasinski and Kothari (2007) study both the recommendation revisions around M&A deals and analysts' growth forecasts. They find evidence for conflicts of interest on recommendation revisions for acquirer-affiliated analysts covering acquirers. In their ordered logistic regression analysis, Kolasinski and Kothari (2007) find evidence that acquirer-affiliated analysts are more optimistic about acquirers than the consensus. In addition, they find evidence suggesting that the deal value magnifies the effects of analyst affiliation. However, their findings for acquirer-affiliated analysts reporting on targets are mixed and they can not conclude that acquirer-affiliation would affect upgrades of target stock. However, they do find evidence that when stock deals are large, target-affiliated analysts become more optimistic about the acquirer after the setting of the exchange ratio which is consistent with their conflict of interest hypotheses.

Kolasinski and Kothari (2007) study also the effect of target and acquirer affiliation on long-term growth forecasts. They find statistically significant results only for acquirer-affiliated analysts' long-term growth forecasts on acquirers and conclude that acquirer-affiliated analyst tend to issue slightly more positive long-term growth forecasts than consensus. However, this result is economically insignificant. Kolasinski and Kothari (2007) conclude that there seems to be conflicts of interest present in analysts' recommendations and recommendation changes but not in long-term growth forecasts. Table 2.3 presents the findings of Kolasinski and Kothari (2007).

TABLE 2.3. The hypotheses and findings In Kolasinski and Kothari (2007)

Analyst Affiliation	Analyst report on	Deal type	Timing of report	Prediction under conflicts of interest	Findings
Acquirer	Acquirer	Cash	Anytime	Optimism	Supporting evidence provided
Target	Acquirer	Cash	Anytime	Indeterminate/ Pessimism	No supporting evidence
Acquirer	Acquirer	Stock	Before Exchange ratio set	Optimism	Supporting evidence provided
Acquirer	Acquirer	Stock	After Exchange ratio set	Optimism	Supporting evidence provided
Target	Acquirer	Stock	Before Exchange ratio set	Pessimism	Supporting evidence provided for large deals
Target	Acquirer	Stock	After Exchange ratio set	Optimism	Supporting evidence provided for large deal
Target	Target		Anytime	Optimism	Mixed, no evidence provided
Acquirer	Target		Anytime	Pessimism	Mixed, no evidence provided

Bradley et al. (2007) study whether there is systematic evidence of conflicts of interest in analyst behaviour surrounding tender offers. They compare the ratings strength of affiliated and unaffiliated analysts' recommendations in stead of studying the recommendation changes studied by Kolasinski and Kothari (2007). Contrary to Kolasinski and Kothari (2007), they exclude all stock financed deals and address the question of whether analyst opinions are useful relating to tender offer transactions. In addition, Bradley et al. (2007) study the stock market reaction to affiliated and unaffiliated recommendations which is not studied in Kolasinski and Kothari (2007). After excluding the stock financed deals Bradley et al. (2007) are forced to study only hypotheses relating to whether analysts issue biased research to attract investment banking and M&A business and leave out the deal execution-related hypotheses of analysts acting strategically to either increase the probability of deal closing or optimising the deal value, which were included in the Kolasinski and Kothari (2007) study.

Bradley et al. (2007) also concentrate on recommendations and leave out long-term growth estimates studied in Kolasinski and Kothari paper (2007). Bradley at al. (2007) study also whether analysts add value by identifying possible targets prior the announcement. They argue that if analysts were able to identify future targets, they would issue more buy recommendations on targets before the M&A announcement or time up- and downgrades to create investor value.

Bradley et al. (2007) do not separate affiliated analysts by target or acquirer affiliation as Kolasinski and Kothari (2007) and assume that affiliated analysts in general issue overly optimistic recommendations about client firms involved in M&A deals. They then argue that analysts might issue these overly positive recommendations due to two reasons, the first being that they simply are biasing their research to benefit client firms and the bank, and the second being that affiliated analysts came into possession of superior insider information which is then passed on to their recommendations. Thus Bradley et al. (2007) assume conflicts of interest to benefit either client firms and investment banks or analysts themselves. Bradley et al. (2007) hypotheses are presented in table 2.4 below.

TABLE 2.4. Bradley et al. (2007) hypotheses and motives behind them

Analyst Affiliation	Deal Type	Report timing	Recommendation under conflicts of interest	Initial market reaction	Long-run performance	Gain for client firm	Gain for the bank / analyst
Investment bank	cash	Before deal announcement	more optimistic on targets & acquirers	discount	inferior / superior if analysts have superior information	Probability of shareholder approval increases	Deal completion probability & analyst reputation increase
Investment bank	cash	After deal announcement	more optimistic on acquirers	discount	inferior / superior if analysts have superior information	Deal seems better	More deals from pleased management & increase in analyst pay and reputation
No affiliation	cash	Before deal announcement	less optimistic	no discount	superior		
No affiliation	cash	After deal announcement	less optimistic	no discount	superior		

Bradley et al. (2007) do not find evidence of systematic conflicts of interest in their whole sample. However, sub-period analysis for the years 1999-2000 suggests that conflicts of interest may have existed during the internet bubble period. They are also unable to find evidence that analysts can discern successful acquisitions from the unsuccessful ones in their analysis of long-term returns. Instead, they find that stocks rated below "Buy" outperform those with "Buy" recommendations and conclude that although investors that follow affiliated analysts' recommendations are not significantly worse off than investors that follow

unaffiliated analysts, neither group does better than investors who do not use analysts' recommendations at all. Table 2.5 below presents the findings of Bradley et al. (2007)

TABLE 2.5. The hypotheses and findings on Bradley et al. (2007)

Analyst Affiliation	Deal Type	Report timing	Recommendation	Initial market response	Long-run performance	Findings
Investment bank	cash	Before deal announcement	Optimism on targets & acquirers	discount	Underperform / outperform	Support for affiliated analyst optimism on acquirers for time period 1999-2000. Support for discounting as well. No significant difference in long-run performance
Investment bank	cash	After deal announcement	Optimism on acquirers	discount	Underperform / outperform	Support for affiliated analyst optimism for time period 1999-2000. Support for discounting as well. No significant difference in long-run performance
No affiliation	cash	Before	less optimistic	no discount	outperform	Support for less optimistic recommendations compared to affiliated analysts for the period of 1999-2000.
No affiliation	cash	After	less optimistic	no discount	outperform	Support for less optimistic recommendations compared to affiliated analysts for the period of 1999-2000.

As can be seen from the studies by Kolasinski and Kothari (2007) and Bradley et al. (2007), there are analyst affiliation seems to generate conflicts of interest even though the results presented in the studies are mixed. The reason why Bradley et al. (2007) failed to find evidence on conflicts of interest may be due to the fact that they did not divide analyst affiliation according to the advisor relationship as Kolasinski and Kothari did in their study.

2.3.3. Selection bias in M&A context

Even though selection bias is much more eminent in investment banking relationships in security issuance situations, according to Kolasinski and Kothari (2007), there are circumstances where selection bias is present in M&A context as well. The acquirer advisor's goal is to obtain as low valuation of the target as possible, so it is plausible that its execution ability would be compromised if it employs an analyst who is bullish on the target. Thus investment banking firms with bullish priors about the target might be less likely to get assigned as acquirer advisors. For similar reasons, the target advisor's execution ability would be compromised if it employs analysts bearish about the target. Hence Kolasinski and Kothari (2007) argue, that the selection bias hypothesis predicts that target-affiliated analysts are optimistic about the target and acquirer-affiliated analysts are pessimistic about the target.

Kolasinski and Kothari (2007) discuss in addition that in a stock deals, acquirer's advisors seek a high valuation of the acquirer's stock and thus selection bias hypothesis predicts that acquirer-affiliated analysts are optimistic about the acquirer. In contrast, target advisors seek a low valuation of acquirer stock (before the exchange ratio is set, that is) and thus selection bias hypothesis suggests that target-affiliated analysts are pessimistic about the acquirer.

However, Kolasinski and Kothari (2007) recognise two situations that are free from selection bias in M&A context. The first is a situation where acquirer-affiliated analysts are reporting on the acquirer in cash deals. In a cash deal the acquirer stock price is irrelevant and therefore optimism or pessimism compared to the consensus recommendations may be viewed as a manifestation of conflicts of interest. Optimism would aid client management to sell the deal to shareholders and would also suit for their general desire for optimism.

The second situation considers target-affiliated analysts in stock deals and the possible manifestation of conflicts of interest is seen in the reaction of target-affiliated analysts after the setting of the stock exchange ratio. To aid clients, target-affiliated analysts could be pressured to publish pessimistic research before the setting of the exchange ratio. This could be a result of either honestly pessimistic view regarding the acquirer stock or selection bias. However, the change of analyst opinion from pessimistic to optimistic after the setting of the exchange ratio would suggest that there are conflicts of interest at play.

2.3.4. Recent regulatory changes and their possible impact

The stock market crash of 2000-2001 triggered concerns that investors were misled by analysts' and their biased research (see for example Kadan et al. 2008). Concerns resulted in changes in regulatory environment beginning in July 2002. The main changes in US were NASD Rule 2711 and the amended NYSE Rule 472 on sell-side research. Finally, in December 2002, the Global Analyst Research Settlement involving ten US banks (later twelve), the SEC, the NYSE, the NASD and the New York Attorney General was formally announced. The purpose of these regulations was to restrain conflicts of interest that affected analysts' research by substantially limiting relations between research and investment banking departments. The new rules also set up rigorous disclosure requirements[3] that intended to make research output more meaningful.

The stock market crash of 2000 resulted in regulatory changes in Europe as well. Commission of the European Community (CEC) summoned a working-group of private sector activators, independent consultants, regulators and professional groups to examine the matter. In addition, new directives were enacted and the technical committee of International Organisation of Securities Commission (IOSCO) published a report considering analyst conflicts of interest. CEC working group report concentrated on commenting on conflicts of interests resulting from analyst's participation in investment banking activities, best practices followed in companies issuing securities, analyst's compensation and analysts' securities trading. IOSCO's report mentions, among other things, the importance of investor education in the elimination of analysts' conflicts of interest.

Directives focus on instructions on organising operations to ensure the neutrality of analysts' research and defining disclosure requirements on, for example, the identity of the analyst and his employer, assumptions behind the recommendations and definition of the meaning of recommendation classes. In addition, similar disclosure requirements mentioned in footnote 3 are defined in the directives. As a whole, CEC assumes that the conflicts of interests can be dealt with both self-regulation and best-practices principles concerning controlling and

---

[3] Disclosure requirements include for example information on whether an analyst receives compensation based on investment banking revenue, whether she holds a position in the company or whether the subject company is a client.

disclosure of conflicts of interests between analysts, issuers and investment banks. In addition, investor education about the possible conflicts of interests is seen as an important means of restraining the conflicts of interests.

Kadan et al. (2008) have studied the effects of regulation change on affiliated analysts' recommendations. According to Kadan et al.(2008), regulation changes induced a new rating scale of only three classes in US, "Buy", "Hold"/"Neutral" and "Sell" which was adopted by a large number of analysts from year 2002 onwards. However, Kadan et al. (2008) argue that the scale change is somewhat cosmetic since prior the change, most of the analysts were reporting merely "Strong buy", "Buy" and "Hold" recommendations and thus using a de-facto three-point scale. Still, the change in rating system would have made a difference for retail investors who may have failed to make the adjustment of "Strong buy" to "Buy", "Buy" to "Hold" and "Hold" to "Sell" as institutional investors probably managed to do.

Kadan et al. (2008) argue that the regulation changes and the migration to three-tier rating system have affected the informative value of recommendations. Additionally, affiliated analysts are no longer more likely to issue optimistic recommendations compared to unaffiliated analysts. However, they are still less likely to issue pessimistic recommendations. Kadan et al. (2008) find also that price reactions to optimistic recommendations have become stronger after the regulations whereas reactions to neutral and pessimistic recommendations have become less negative. This might be due to the fact that the relative amount of negative recommendations has increased in their sample after the regulation change and thus a negative recommendation does not contain as much information as it did before the regulations. There are no studies concerning the effects of the new European regulation on conflicts of interest in analyst recommendations on European stocks.

3. Hypotheses

My hypotheses are described in this section. I have hypotheses relating to three categories of variables. First category, *analyst report characteristics*, includes variables describing the source of affiliation and report timing related to the M&A deal announcement. The second category, *deal specific variables*, includes variables that measure the effects of the transaction characteristics on conflicts of interest (form of payment, deal value, attitude). The third category, *deal timing*, includes variables regarding the market situation during the deal announcement (bear/bull market, high / low M&A volume period, before / after European regulation changes 2003).

Foundation for my hypotheses is formed on the main motives behind the conflicts of interest in an M&A advisor-client relationship. Based on the literature review in section 2, conflicts of interest may be formed between the investment bank and its client firm (both acquirer- and target-clients), and, when the interests of client-firm and the bank are congruent, between them and investors. In addition, matching bank –client-firm interests may conflict with bank-employed analyst's interests, if the analyst aims to maximise personal reputation by exploiting insider information. Table 3.1 presents the motives in the most simplified level. These motives become more complex when they are considered in more detail in varying investment banking relationships and different deal contexts.

TABLE 3.1 presents the basic motives for and parties affected by conflicts of interest.

Conflict of interest is between	Reason	Motive for conflicts of interest	Related Hypotheses
Bank vs. acquirer- & target-clients	Bank's fee maximisation	Bank aims to maximise deal value & completion probability Hostile deal situation for target clients	H1, H6, H7, H8, H10, H11
Bank vs. acquirer-client	Bank's stake in the target	Bank aims to maximise deal value for target shareholders	H6, H7
Investors vs. client firm & bank	Bank's competitive and strategic actions / firm desire to optimise the deal terms	Bank aims to maximise reputation benefits by pleasing client management & maximise deal completion probability & gain shareholder approval for the deal	H2, H3, H6, H7, H8, H10
Affiliated analysts vs. client-firm & bank	Analysts reputation maximisation	Analysts aim to exploit insider information in issuing more accurate recommendations	H5, H9

Analyst report characteristics

Affiliation

According to McLaughlin (1990), investment banking fees are conditional on both deal value and completion. Thus both target-and acquirer-affiliated analysts may be assumed to aim for the maximisation of deal price and completion probability. Completion probability can be increased by issuing more high level recommendations or upgrading acquirer's stock after the deal announcement since this might increase shareholder approval for the deal as discussed in section 2.1.1. My first hypothesis is the following:

H1 Affiliated analysts upgrade acquirer-client's stock after the deal has been announced

Higher recommendations would also please the acquirer-client's management's general desire for positive recommendations which would enable investment banks to use positive recommendations as a competitive tool when they try to win investment banking business as discussed by Kolasinski and Kothari (2007) and presented in the literature part. On the other hand, the optimism of acquirer's stock may also result from selection bias as discussed in section 2.3.4. My second and third hypotheses are the following:

H2 Acquirer-affiliated analysts issue more high level ("Strong buy" and "Buy") recommendations about acquirer's stock than other analysts

H3 Acquirer-affiliated analysts issue less negative ("Sell" and "Strong sell") recommendations than other analysts

In addition, according to selection bias hypothesis presented by Kolasinski and Kothari (2007), target companies would benefit from pessimistic recommendations about the acquirer since this would affect the stock exchange ratio. Thus target companies might be interested in hiring an advisor bank whose analysts have pessimistic priors about the acquirer. My fourth hypothesis is the following:

H4 Target-affiliated analysts are pessimistic about the acquirer and issue lower level recommendations about acquirer's stock

Reputation

Good reputation is a dear possession for both analyst and the bank. Investment banks have strong incentives to obtain high reputation because they need to sell their services repeatedly in the markets and McLaughlin (1990) argues that the reputation building concerns mitigate the incentives for conflicts of interest in investment banks' fee contracts. In addition, as discussed in section 2.2.2 and 2.2.3, analysts' reputation as a provider of honest and accurate research has a significant effect on analysts pay. Thus highly reputable analysts are less probable to issue overly optimistic research. Most reputable analysts are often hired by the best and largest investment banks and thus my fifth hypothesis is the following:

H5 Analysts hired by the top 15 largest banks issue less optimistic research

Timing

Analysts' report timing is related to the different form of payment situations, i.e. is the report published before or after a stock exchange ratio has been set, and the hypotheses affected by the timing variable are discussed in the next section.

Deal specific variables

Form of payment

As a whole, it is in banks' best interest to maximise M&A deal value and completion probability. This is backed up by several issues discussed in literature review in chapter 2. For example, as discussed in section 2.3.1 (McLaughlin (1990)), bank's fees are closely related to deal closure and deal value. In addition, analyst pay is related to recommending investment banking client's stock and the analysts that recommend investment banking client's stock are rewarded with bonuses conditional on the deal value (Groysberg (2008)). Also acquirer-advisor bank's stake in target company makes it advantageous for the bank to maximise the deal value (Bodnaruk (2007)).

Deal value maximisation for target client can be achieved for example by advantageously affecting the acquirer's stock price surrounding the setting of stock exchange ratio in stock financed deals. For example, target-affiliated analysts could try to maximise deal value for their client firms by issuing lower recommendations prior the deal announcement and higher recommendations after the deal announcement. This would result in a higher stock exchange

ratio. On the other hand, acquirer-affiliated analysts could try to minimise the deal cost to their client firm by issuing higher recommendations about the acquirer's stock prior the deal announcement to increase the value of the medium of payment before the stock exchange ratio has been decided and thus minimise the amount of stock needed to give up to the target. I name the hypotheses related to affiliated analysts' strategic recommendation behaviour as *strategic behaviour hypotheses* and they are the following:

H6 In stock-deals, target-affiliated analysts issue lower recommendations or downgrade acquirer's stock before the deal has been announced and the exchange ratio set

H7 In stock-deals, target-affiliated analysts issue higher recommendations or upgrade acquirer's stock after the deal has been announced and the exchange ratio set

H8 In stock deals, acquirer-affiliated analysts issue higher recommendations or upgrade the acquirer's stock before the exchange ratio has been decided

However, stock-financed deal announcements usually result in deterioration of the acquirer's stock value, as discussed in section 2.1.1. concerning the short-term returns related to M&A deal announcements. Thus under the assumption that analysts aim to enhance their own reputation by utilising the insider information they garner when they are taken "over the wall" as discussed in section 2.2.2, affiliated analysts should issue lower recommendations or downgrade acquirer's stock before the deal announcement. Thus my ninth hypothesis is the following:

H9 Affiliated analysts downgrade acquirer's stock before the announcement of a stock financed deal

Deal value

Analysts are keen to maintain an excellent reputation (Groysberg (2008)) and, as discussed in section 2.2.2 concerning the origins of analysts' conflicts of interest, may need large enough gains from biasing their research due to the damage biased recommendations might cause to their reputation. Gains grow larger when the deal value increases since analysts' bonuses may be tied to M&A deal fees. Thus my tenth hypothesis is the following:

H10 Bias in affiliated analysts' recommendations is larger when deal value is large

Attitude

As discussed in section 2.3.1, according to McLaughlin (1990), investment bank fees are closely tied to deal completion. This holds also for a target-advisor in hostile deals and target-affiliated analysts may want to maximise deal completion probability and upgrade acquirer stock to increase acquirer and target shareholder approval for the deal. Thus my 11th hypothesis is the following:

H11 Target-affiliated analysts upgrade acquirer stock after a hostile deal is announced

Deal timing

As discussed in section 2.3.2 concerning conflicts of interest in M&A context, mergers seem to be clustered within time. This might increase investment bank competition in times of high merger activity which in turn would realise in overly optimistic analysts' recommendations published to win investment banking business. In addition, upgrading acquirer's stock would make the deal appear better and thus improve investment bank's reputation and aid in gaining more business. Thus my 12th hypothesis is the following:

H12 Investment bank employed analysts issue more high recommendations during high M&A volume years (2000 and 2004-2006 in my sample)

In addition, according to Bradley et al. (2007), affiliated analysts issue overly optimistic recommendations during the stock bubble of 2000. Thus my 13th hypothesis is the following:

H13 Affiliated analysts issue overly optimistic recommendations during stock market upturns (1996-2000 and 2003-2006 in my sample)

Regulation changes of the year 2003 in Europe made the analyst affiliation easier to perceive due to, for example, increased disclosure requirements and investor education as discussed in the section 2.3.4. This could result in less optimistic recommendations and an increase in negative recommendations issued by affiliated analysts if the regulation change would have had similar effects is Europe as in US (Kadan et al. 2008)). Thus my 14th hypothesis is the following:

H14 Affiliated analysts issue more negative ("Sell" and "Strong sell") recommendations after year 2003

Table 3.2 next page presents my hypotheses.

TABLE 3.2. The hypotheses used in my thesis.

	Hypotheses
H1	Affiliated analysts upgrade acquirer-client's stock after the deal has been announced
H2	Acquirer-affiliated analysts issue more high level ("Strong buy" and "Buy") recommendations about acquirer's stock than other analysts
H3	Acquirer-affiliated analysts issue less negative ("Sell" and "Strong sell") recommendations than other analysts
H4	Target-affiliated analysts are pessimistic about the acquirer and issue lower level recommendations about acquirer's stock
H5	Analysts hired by the top 15 largest banks issue less optimistic research
H6	In stock-deals, target-affiliated analysts issue lower recommendations or downgrade acquirer's stock before the deal has been announced and the exchange ratio set
H7	In stock-deals, target-affiliated analysts issue higher recommendations or upgrade acquirer's stock after the deal has been announced and the exchange ratio set
H8	In stock deals, acquirer-affiliated analysts issue higher recommendations or upgrade the acquirer's stock before the exchange ratio has been decided
H9	Affiliated analysts downgrade acquirer's stock before the announcement of a stock financed deal
H10	Bias in affiliated analysts' recommendations is larger when deal value is large
H11	Target-affiliated analysts upgrade acquirer stock after a hostile deal is announced
H12	Investment bank employed analysts issue more high recommendations during high M&A volume years (2000 and 2004-2006 in my sample)
H13	Affiliated analysts issue overly optimistic recommendations during stock market upturns (1996-2000 and 2003-2006 in my sample)
H14	Affiliated analysts issue more negative ("Sell" and "Strong sell") recommendations after year 2003

4. Data and methodology

4.1. Sample selection and description

4.1.1. Mergers and acquisitions

My sample size is 814 mergers and acquisitions. Data for M&As is gathered from SDC Platinum database. The data is for time period 1996-2006 and consists of publicly quoted companies; both target and acquirer are publicly quoted. The data time period ends in 2006 with the intention that I will be able to get analyst recommendations for a whole year after all deals. I start the data from 1996 to get both down- and upturns in the dataset. Both acquirer and target companies are European companies. The sample has not been limited into any specific industries. Minimum deal size is 1m EUR.

The sample consists of M&A deals where the acquirer gains full ownership of the target. Nearly all M&A situations have a friendly status. The fact that there must be analyst recommendations available both prior and after the deal announcement reduces the size of the final sample. Table 4.1 describes the derivation process of the sample.

TABLE 4.1 Data Derivation Process for sample mergers and acquisitions

Selection Criteria	Number of mergers and acquisitions meeting selection criteria
Mergers in SDC Platinum Database between years 1996-2006, European acquirers and European targets	6 979
Acquisitions described in SDC as merger, tender offer or acquisition of assets. Excludes acquisitions described by SDC as acquisition of certain assets, acquisition of partial interest, acquisition of remaining interest, buy-backs, recapitalisations, leveraged buyouts, spin-offs, self-tenders, repurchases, minority share purchases or privatisations	2 980
Acquisitions, for which the deal value larger than 1,0 m EUR	911
Acquirer ownership after transaction 100%	875
Acquisitions for which acquirer has a Bloomberg ticker for additional information	814

Figure 1 presents the final sample M&A deal volume by year. Years 2000 and 2004-2006 are high volume years in my sample. Also the number of deals per year in my final sample is presented.

FIGURE 1. M&A deal volume and number of deals in final data sample divided by year.

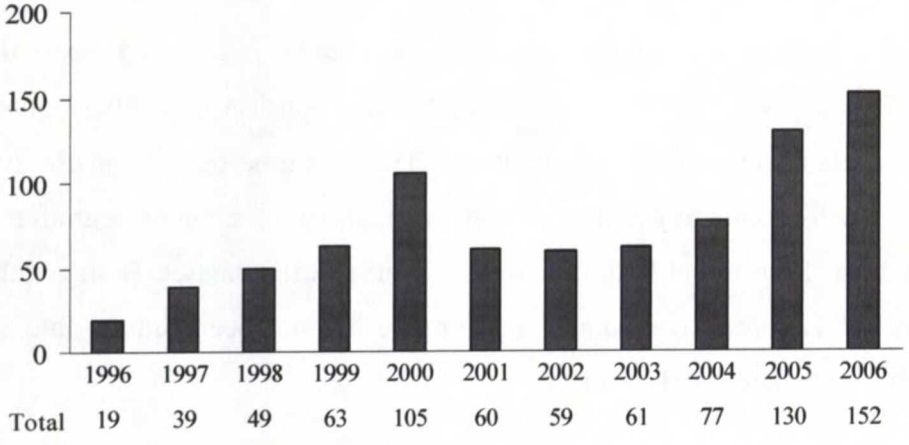
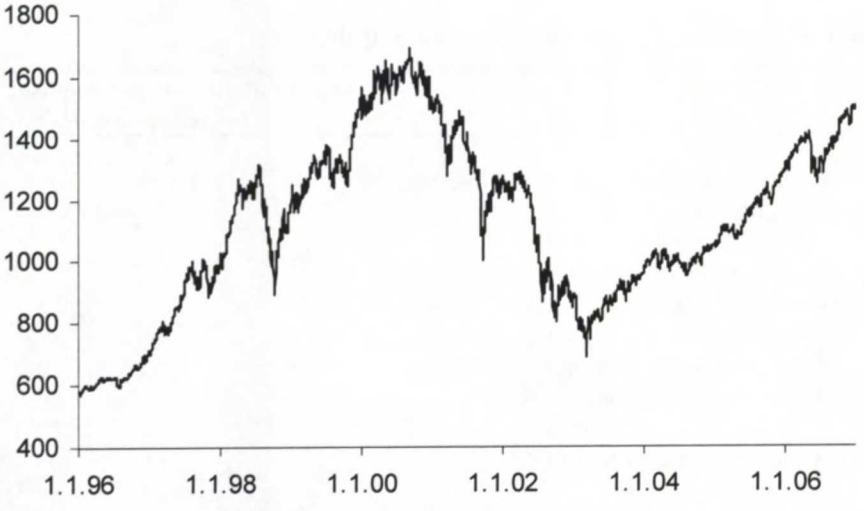


Figure 2 below presents the S&P 350 index values for my sample period. Years 1996-2000 and 2004-2006 are bull markets in my sample period.

FIGURE 2. Market conditions during the period of 1996-2006.



Source: Bloomberg

4.1.2. Analyst recommendations

I am going to study analyst recommendation levels (i.e. strong buy, buy, hold, sell, strong sell comments) and changes in them. While many early studies on of potential analyst conflicts examine optimism in earnings forecasts, I concentrate on the recommendations since Ljungqvist et al. (2007) argue that analysts' recommendations give a good proxy for the value and bias in the analyst's report. In addition, Ljungqvist et al. (2007) and Womack (1996) discuss that the recommendations and timely release of recommendation changes contain aspects of analyst's integrity, responsiveness, industry knowledge and professionalism which are among the most valued analyst characteristics by investors.

Moreover, according to Kolasinski and Kothari (2007), exact forecasts of EPS and other figures tend to be targeted for institutional investors, who have more knowledge and research power to detect whether they are reliable or not. Thus it is clear that bias in these figures would be easily spotted by the main recipients of analysts' research and this encourages analysts to keep their forecasts unbiased. Also Ljungqvist et al. (2007) argue that there would be a grater cost for analysts to bias their short-term forecasts in comparison to recommendations since the forecasts are more easily verifiable. Finally, according to Kadan et al. (2008) recommendations were the focal point of complaints about conflicts of interest before the renewal of regulations.

The recommendations are timed from -4Q to +4Q quarters surrounding the M&A del announcement. Thus I will have data on the recommendations for one year before and after the M&A announcement. My data consist merely of recommendations about the acquirer's stock, since there was no recommendation data available for targets during the selected time period. However, the absence of target recommendations is not a severe drawback since, according to Bradley et al. (2007) the conflicts of interest issues are magnified in acquirer-client relationships. The acquiring firm will continue as a going concern whereas the target firm will not; therefore the probability of repeat business is near zero for target firms. Thus the main incentives for target-affiliated banks' might probably be to close the deal with best possible terms in order to build reputation in the eyes of other potential targets. This can be done via recommendations about the acquirer's stock. In addition, Kolasinski and Kothari (2007) are unable to find statistically significant results for recommendations about target's stock.

My recommendation data is a total of 6 278 recommendations, and the recommendations are controlled for both acquirer advisor and target advisor affiliation.

TABLE 4.2. Number of recommendations about acquirer's stock issued by affiliated and unaffiliated analysts in my sample of 814 M&A deals

Recommendation / Affiliation	1	2	3	4	5	Total
Target-affiliated	20	16	40	36	41	153
Acquirer-affiliated	9	18	57	63	90	236
Unaffiliated	406	607	1 602	1 608	1 666	5 889
Total	435	641	1 699	1 707	1 797	6 278

As can be seen from table 4.2, analysts in general seem to issue more positive than negative recommendations as discussed in section 2.2.1.

The recommendation data is retrieved from JCF database for institutional investors. JCF database is owned by a company called FactSet, and it provides data from several databases (FactSet Research Connect with over 400 research contributors, Reuters Research with over 700 contributors, Thomson First Call Research with over 700 contributors, Thomson First Call BondCall with over 80 contributors and Thomson First Call Notes with over 200 brokers) via a single interface. FactSet is a leading provider of financial information and analytic applications globally. The top ten investment banks and 95 of the world's top one hundred asset managers use its services. The database includes analysis and recommendations of over 20 000 companies and is updated daily. The historical data on JCF database dates back to the beginning of 1990.

According to Ljungqvist et al. (2007), 54 729 analyst recommendations (out of a total of 280 463) reported in the IBES database covering a time period of 1993-2002 have been altered after their original announcement. The changes include alterations of recommendation levels, additions and deletions of recommendations and removals of analyst names. In their study, Ljunqvist et al. (2007) conclude that the changes appear non-random across analysts, firms and brokerage houses and have a considerable impact on the overall distribution of recommendations across stocks and within individual stocks and brokerage firms. The changes also affect trading signals, back-testing inferences and track-records of individual analysts and models of analysts' career outcomes.

Previous studies have mostly based their analysis on IBES database. Thus by using the JCF database, I am able to gain access to a wider range of analyst research than the previous studies have had. The combination of several databases used in the JCF database might dim the possible bias resulting from the alterations of recommendations in IBES for years 2000-2002 even though my data is partially acquired from IBES. However, it is not possible to recognise the exact database from which each recommendation is originated and thus it can not be stated that the bias in IBES would be totally avoided in my data. As a matter of a fact, there were 368 recommendations where the firm and analyst issuing the recommendation are marked as "confidential". I have removed these recommendations from my data.

4.1.3. Other data

The acquirer related control variables are collected from Bloomberg and SDC Platinum databases. Information about analyst affiliation and advisor relationships is gathered by hand from JCF and SDC databases. Analyst affiliation with advisor bank (either target or acquirer advisor) is used as a proxy for conflicts of interest. This is motivated by prior research findings that advisor relationships may result in biased recommendations (see for example Kolasinski and Kothari (2007) and Bradley et al. (2007).

4.2. Methodology and variables

In this section, I first describe the methodologies used and then proceed to the description of both the dependent and explanatory variables.

4.2.1. Ordered logistic regression

Following Kolasinski and Kothari (2007) and Agrawal and Chen (2007), I will employ an ordered logistic regression analysis to determinate whether there is an association between analyst recommendations, M&A advisory relationship and other variables defined in section 4.2.2. Ordered logistic regression is used, rather than least squares, since the recommendation changes and levels are discrete and ordinal. The discrete and classifying nature of the dependent variable violates the assumptions used by traditional OLS regression. For example, the distributions of disturbance term or the dependent variables' are not continuous or normal. Thus the standard errors and usual test statistics calculated by linear regression model would

be invalid. In addition, since my dependent variables are ordinal, ordered logistic regression is preferred over multinomial logistic regression that would not be able to recognise the ordered form of my variables.

The ordered logistic regression examines the impact of a one unit change in the value of an independent variable to the log odds of a certain event happening; here the event is the appearance of a higher recommendation or recommendation revision. Logistic regression applies maximum likelihood estimation after transforming the dependent into a logit variable (a natural logarithm of the odds of the dependent being in a higher rather than lower category). The odds ratio is defined as follows:

$$\text{Odds ratio} = \frac{\text{odds(if the corresponding variable is incremented by 1)}}{\text{odds(if the variable is not incremented)}}$$

or, equivalently,

$$\text{Odds ratio} = \frac{P(\text{event} \mid x+1) / (1 - P(\text{event} \mid x+1))}{P(\text{event} \mid x) / (1 - P(\text{event} \mid x))} \quad (1)$$

where P is probability of a certain event.

Ordered logistic regression as most discrete dependent models is presented in the form of index function model. Here each analyst's recommendation is seen to depend on various measured characteristics of the deal, analyst affiliation, firm in question and certain unmeasured issues. The procedure relates the combined values of the measurable and immeasurable factors to the likelihood that an analyst will issue a particular recommendation on the stock in question. The index function is denoted as $\boldsymbol{\beta}'\mathbf{x}$ which represents the influence of the measured factors. The influence of unmeasured factors is represented by ε, and their combined influence is presented by:

$$y_i^* = \ln(\text{odds ratio}) = \alpha + \beta' x_i + \varepsilon_i \quad (2)$$

where β' are the coefficients to be estimated and the x_i are the explanatory variables.

The estimated *b* coefficients associated with explanatory variables are estimators of the change in the ordered log odds of the dependent variable caused by one unit change in the independent variable. Odds ratios can be estimated by using the exponentiated coefficients, i.e. the natural log base to the exponent b, where b is the parameter estimate.

The coefficient estimate *b* can be converted to the odds ratio by using the following equation:

$$\text{Odds ratio} = \exp(b) \tag{3}$$

Values Exp(b) > 1 mean the independent variable increases the odds (outcome more severe than *i*) and values Exp(b) < 1 mean that the independent variable decreases the odds (outcome more severe than *i*). Additionally negative (positive) coefficients mean that the odds (outcome more severe than *i*) decrease (increase) for one unit change in the independent variable.

4.2.2. Definitions and calculation of variables

This section presents my variables. I start by explaining my dependent variables and proceed to independent variables. Independent variables are divided into the same categories as my hypotheses in chapter 3.

Dependent variables

Absolute analyst recommendation. Absolute analyst recommendation is the observed single recommendation. Recommendations are coded so that a "Strong sell" is 1, "Sell" is 2, "Hold" is 3, "Buy" is 4 and "Strong buy" is 5. The variable is used to see whether affiliated analysts issue more positive recommendations such as "Strong buy" or "Buy" compared to unaffiliated analysts.

Recommendation revision. Recommendation revisions, i.e. upgrades and downgrades, are the differences between the same analyst's previous and next recommendations. They are calculated by deducting the previous recommendation from the currently observed one and vary from -4 to +5. Thus if an analyst's previous recommendation was 5 and current is 4, the revision would be a downgrade of -1. The highest value of 5 is achieved when the analyst issues her first recommendation about the company and that recommendation is a "Strong

buy" recommendation. For the regression analysis, the values for revision variable are scaled so that downgrade is a value of -1, upgrade 1 and no change is 0.

Relative recommendations. Relative recommendations are used to measure the difference between consensus recommendation and a recommendation by a distinct analyst. Relative recommendations are studied to be able to see whether affiliated analysts are overly optimistic or pessimistic compared to unaffiliated analysts. The relative analyst recommendations are calculated following Agrawal and Chen (2007) methods. They measure the consensus recommendation as the median of all recommendations issued of a certain firm. I modify their approach so that I calculate the consensus recommendation from recommendations about a certain firm issued during the same quarter. The relative analyst recommendation is then calculated by deducting the consensus from the observed single recommendation.

$$\text{Relative recommendation} = REC_{kQi} - Median\ REC_{kQi} \quad (4)$$

Where REC_{kQi} is a single recommendation issued about firm k at quarter i and Median REC_{kQi} is the consensus recommendation about firm k on quarter i. Quarters vary from -4Q to +4Q. Relative recommendations have values ranging from -4 to 5. The relative recommendation variable is scaled into three classes for my regression analysis: -1 (more pessimistic), +1 (more optimistic) and 0 (same level) recommendation.

Independent variables

Analyst report characteristics

Affiliation. I define an analyst to be affiliated if the analyst is employed by an investment bank acting as an advisor for either the acquirer or the target. Both target and advisor affiliations are considered as separate variables; acquirer-affiliation as $Affil_{Acq}$ and target-affiliation as $Affil_{Target}$.

Report timing. I define report timing by dividing the recommendations into quarters. If a recommendation is issued one year prior the M&A announcement, it is located in quarter -4Q, and if the recommendation is published one year after the deal announcement, it is located in quarter +4Q. The recommendations issued between the -4Q and +4Q are located in

respective quarters as well. I use such a wide time window to be able to study if affiliated analysts start to alter their recommendations prior the announcement of the deal and if they provide positive research after the deal. Quarter -4Q can be seen as a neutral quarter since according to figures 3, 4 and 5 presented later in chapter 5, all analysts' recommendations seem to be on the same level during that time. The recommendation publication dates are provided by the JCF database. In addition, two dummy variables, before and after are formed. Before refers to the situation where recommendation has been issued prior to the M&A deal announcement and after to a situation when recommendation is published after announcement.

Timing variable is used also in interaction variables Affiliation*After and Affiliation*Before for both target and acquirer affiliation in order to find out whether affiliated analysts issue different reports about the acquirer in different time periods surrounding the M&A announcement.

The quarter dummy variables are used as well in the formation of interaction terms Affiliation*Quarter for both acquirer and target affiliation. The motivation for these interaction terms rises from figure 3 presented later in the section 5.1.1. In figure 3 recommendation patterns suggest that the direction of the recommendation revisions and the recommendation level seem to be related to the quarter during which they have been published.

Top 15 banks. As discussed in section 2.2.3, most reputable analysts are often hired by the best banks. Working for one of the top 15 largest investment banks in the market is used as a proxy for both analyst and bank reputation. A good reputation is a dear possession to both the bank and the analyst and it can affect their willingness to issue biased research. Banks in the 15 largest investment banks group are recognised by measuring their market shares relative to other banks. Market share is measured as the number of deals advised by each bank. This follows loosely the procedure used by Meggison and Weiss (1991) who base their bank reputation measure on the market share of offer proceeds.

The underlying idea in using market shares as a proxy for reputation is that the quality of the banks is observed by the market. This observed quality generates more business to the bank and is thus seen in its market share. In my data the 15 largest banks are the following: ABN-

AMRO, Morgan Stanley, UBS Investment bank, JPMorgan Chase, Deutsche Bank, Credit Suisse First Boston, Lazard, SEB Enskilda, Goldman Sachs, BNP Paribas, Rothschild, Merrill Lynch, Dresdner Kleinwort Benson, Carnegie and Citigroup. There are 1 762 recommendations issued by the top 15 banks in my sample. The dummy variable *Top15* equals 1 if the recommending analysts' employer bank belongs to the group specified above and 0 otherwise.

Deal specific variables

Form of payment. As presented in the literature review, form of payment has an impact on shareholder returns in M&A deals. Form of payment is defined between the usage of cash and stock as a payment instrument in the deal. The form of payment is regarded to be stock if at least 50% stock financing is used and then the dummy variable *stock* equals 1. Otherwise dummy variable *stock* is 0. In my sample this results in 1 496 recommendations. Related to this, I use the M&A announcement date as a proxy for the stock exchange ratio date. This follows the procedure in Kolasinski and Kothari (2007). As Kolasinski and Kothari (2007) discuss, SDC does not make the exact exchange ratio date available and the exchange ratio is fixed in most M&A deals on the announcement date.

Deal value. Deal value is measured as the natural logarithm of the total amount paid by the acquirer. It is used to measure the importance of the deal to the investment bank. Hence, it is used as a proxy of fees generated via the deal, since as discussed in section 2.3.1, investment banking fees are closely related to the deal value. Actual fees are not used since they are scarcely available. Deal value can also be associated with analyst incentives since larger deals usually result in larger bonuses for affiliated analysts if they assist in closing the deal as discussed in section 2.2.3. To see the above mentioned joint effects, deal value is used to compose the interaction term Affiliation * Deal value for both acquirer- and target-affiliation. The interaction variable separates large deals from smaller ones and thus provides more information than the affiliation variable that treats all deals equivalently.

Attitude. Deal attitude is used to measure if hostile deals result in different analyst behaviour. This is especially interesting with regard to target affiliated analysts since they face conflicts of interests in maximising their fee generation (i.e. closing the deal) and their client firm's best interest. Variable *Hostile* has a value 1 if the deal is hostile and 0 otherwise.

Deal timing variables

Bear vs. Bull market. Years 1996-2000 and 2004-2006 are regarded as bull markets in my study. Likewise, years 2000-2003 are bear market years. (See figure 2). The market index used to proxy for bear and bull markets is S&P350 index consisting of 350 largest European stocks. The dummy variable *Bull* equals 1 if the market situation was bullish and 0 otherwise.

High vs. low M&A activity. Years 2000 and 2004-2006 are high volume years in M&A market in my data sample (see figure 1). This variable is used as a proxy of investment bank competition, since during a high volume market there is more competition than when the volumes are low, as discussed in literature review in section 2.3.2. The dummy variable *M&AVol* equals 1 if the recommendation has been issued during high M&A activity period and 0 otherwise.

Before vs. after regulation changes. The European regulation changes came into force during the year 2003, as discussed in literature review in section 2.3.4. Thus the year 2003 is used as a boundary year when examining the possible effects of the regulation changes. The dummy variable RegChange equals 1 if the recommendation has been issued after 2003 and 0 otherwise.

Control variables

Acquirer size. Acquirer size is defined as the natural logarithm of acquirer's market value 14 days prior to acquisition. All values are converted into euros with the closing currency rate of the same day.

Debt. Ratio of acquirer's total debt to assets is measured at the financial year end prior to acquisition.

Market-to-book value. Ratio of acquirer's market value of equity to book value of equity is measured at the financial year-end prior to acquisition.

SameSic. Variable SameSic refers to industry sic-codes and it has the value 1 if the firms participating in the deal are from the same industry and value 0 otherwise. The SameSic variable takes into account the first two numbers in the sic-codes.

All variables are summarized in table 4.3.

TABLE 4.3 Panel A. Dependent and independent variables used in the thesis.

Variable	Description	Hypothesis
Dependent variables		
Analyst recommendation	Absolute recommendation values 1 (Strong sell), 2 (Sell), 3 (Hold), 4 (Buy), 5 (Strong buy)	
Upgrade/downgrade	Recommendation revision i.e. observed recommendation compared to the previous one issued by the same analyst. Values -1(downgrade), 1 (upgrade), 0 (no change)	
Relative recommendations	Single analyst recommendation compared to consensus. Values -1 (more pessimistic) +1 (more optimistic) 0 (same level)	
Independent variables		
Analyst report characteristics		
$Affil_{acq}$	1 if the report is issued by an analyst employed by acquirer advisor bank, 0 otherwise	H2, H3
$Affil_{target}$	1 if the report is issued by an analyst employed by target advisor bank, 0 otherwise	H4, H11,
Before	1 if the report has been issued before the stock exchange ratio has been decided, 0 otherwise	H6, H8, H9
After	1 if the report has been issued after stock exchange ratio has been decided, 0 otherwise	H1, H7
Quarter	A series of dummy variables for the publication time of the analysts' recommendations. Time is measured in quarters and varies from -4Q to +4Q.	H1, H6, H7, H8, H9
Top 15	1 if analyst's employer is one of the 15 largest banks, 0 otherwise	H5
Deal specific variables		
Stock	1 if the stock financing percentage is at least 50 percent, 0 otherwise	H6, H7, H8, H9
Value	Natural logarithm of the total consideration acquirer paid for the target	H10
Attitude	1 if the deal is hostile, 0 otherwise	H11
Deal timing		
Bull	1 if the deal is done during bull market (1996-2000 and 2004-2006), 0 otherwise	H13
HighVol	1 if the deal is done during high M&A volume period (2000 and 2004-2006), 0 otherwise	H12
RegChange	1 if deal is done after the European regulation changes (2003), 0 otherwise	H14

TABLE 4.3 Panel B. Interaction and control variables used in the thesis.

Interaction variables		
Affiliation*After	Affiliation dummy * time dummy for after stock exchange ratio has been set. Takes value of 1 if affiliated analysts' recommendations are issued after the deal announcement, 0 otherwise.	H1, H7
Affiliation*Before	Affiliation dummy * time dummy for before stock exchange ratio has been set. Takes value of 1 if affiliated analysts' recommendations are issued before the deal announcement, 0 otherwise.	H6, H8, H9
Affiliation *deal value	Target / acquirer affiliation dummy * deal value	H10
Quarter * Affiliation	Series of dummy variables for quarter and analyst affiliation for both target and acquirer. Takes value of 1 for an affiliated recommendation issued on a given quarter, 0 otherwise.	H1, H6, H7, H8, H9
Top15 * HighVol	Takes on value 1 if the recommendation is issued by an Top15 bank hired analyst during High volume years, 0 otherwise	H12
Top15 * Bull	Takes on value 1 if the recommendation is issued by an Top15 bank hired analyst during Bull market years, 0 otherwise	H13
Top15 * RegChange	Takes on value 1 if the recommendation is issued by an Top15 bank hired analyst after year 2003, 0 otherwise	H14
Affiliation * HighVol	Takes on value 1 if the recommendation is issued by an affiliated analyst during High volume years, 0 otherwise	H12
Affiliation * Bull	Takes on value 1 if the recommendation is issued by an affiliated analyst during Bull market years, 0 otherwise	H13
Affiliation * RegChange	Takes on value 1 if the recommendation is issued by an affiliated analyst after year 2003, 0 otherwise	H14
Control variables		
Size	Acquirer size is calculated as natural logarithm of acquirer market value 14 days prior to the acquisitions (in EUR million)	All
Debt	Ratio of acquirer's total debt to assets is measured at the financial year end prior to acquisition	All
MBval	Ratio of acquirer's market value of equity to book value of equity is measured at the financial year-end prior to acquisition	All
SameSic	Dummy variables for industry sic-codes. 1 if the firms are from the same industry, 0 otherwise.	All

4.2.3. Regression models

I perform three groups of regressions, one group for every dependent variable. The regressions are controlled for White's test for heteroscedasticity. First group is for absolute analyst recommendations and studies how affiliation affects absolute recommendation levels. Second group of regression models is run on relative recommendations to examine if affiliated analysts are overly optimistic compared to unaffiliated analysts. Third group of regression models is run on recommendation revisions to see whether affiliated analysts upgrade acquirer stock more than unaffiliated analysts.

All regressions are run separately for both target-affiliation ($Affil_{Target}$) and acquirer-affiliation ($Affil_{Acq}$) which is marked by writing term $Affil_{Target,Acq}$ in the models. Also the interaction terms are formed for both classes of affiliation respectively. In addition, all models are run for a dummy variable Top15, which is a variable for an analyst working for one of the 15 banks having largest market share in my sample. Interaction terms have been formed for Top15 as well. Finally, regressions are run for Hostile-variable to study how the deal attitude effects the recommendations.

Model 1 analyses whether acquirer- or target-affiliation affects the probability of issuing a certain recommendation. Models include also deal value- and control variables.

Model 1: $$P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + controls + \varepsilon)$$

where Λ is the logistic cumulative distribution function and Rec is the recommendation variable that can take one of five values: 1 if the recommendation is a "Strong sell", 2 if the recommendation is a "Sell", 3 if the recommendation is a "Hold", 4 if the recommendation is a "Buy" and 5 if the recommendation is a "Strong buy". Affiliation variables are dummy variables for analyst affiliation for both acquirer and target. Value variable is a variable for deal value. Control variables are the following: acquirer size, acquirer debt to assets ratio, acquirer market-to-book ratio and *SameSic* for industry sic-codes. See table 4.3 for detailed variable definitions.

Affiliation dummy variables treat all deals equivalently. However, affiliated analysts' incentives to issue biased recommendations may be grater in large deals, since deal size is correlated with M&A fees. To see this possible effect, I run Model 2, to which I add an interaction term between Value and each affiliation dummy variables in turn.

Model 2: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 Value*Affil_{Target,Acq} + controls + \varepsilon)$

Model 3 is run in order to see whether affiliated analysts are more probable to issue optimistic recommendations after the deal is announced and the stock exchange ratio set.

Model 3: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 After + \beta_4 After*Affil_{Target,Acq} + controls + \varepsilon)$

Model 4 is run to see whether affiliated analysts are more probable to issue more optimistic recommendations prior the M&A deal is announced. Same results can be inferred to some extent from the previous model, but model 4 is run to study the timing more carefully.

Model 4: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 Before + \beta_4 Before*Affil_{Target,Acq} + controls + \varepsilon)$

To see whether stock financing affects the probability of affiliated analysts issuing higher recommendations, model 5 is run. The model includes an interaction term between analyst affiliation and stock deal dummy and it separates the affiliated analysts' recommendations about acquirers in stock financed deals from the recommendations about acquirers in cash financed deals.

Model 5: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 Stock + \beta_4 Stock*Affil_{Target,Acq} + controls + \varepsilon)$

Model 6 is run to see whether recommendation issuance quarter has an effect on the probability of issuing a higher recommendation. Quarter refers to a set of dummy variables for quarters from -4Q to +4Q surrounding the M&A deal announcement on quarter 0Q. For

example, for a recommendation issued during the preceding quarter to the M&A deal announcement, Quarter variable used is -1Q.

Model 6: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 Quarter + \beta_4 Quarter * Affil_{Target,Acq} + controls + \varepsilon)$

To identify whether affiliation has a greater effect on recommendations during different time periods specified in the variables description section (Bull-market, High M&A volume market and prior regulation change in 2003), I add dummy variables for those time periods and form Models 7, 8 and 9.

Model 7: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 Bull + controls + \varepsilon)$

Models 8 and 9 are similar to Model 7 except $\beta_3 Bull$ variable is replaced by variables M&AVol in model 8 and RegChange in model 9.

Finally, models 10-12 are run to see whether the combined effect of affiliation and different time periods have an effect on the probability of issuing a higher recommendation.

Model 10: $P(Rec) = \Lambda (\alpha + \beta_1 Affil_{Target,Acq} + \beta_2 Value + \beta_3 Bull + \beta_4 Bull * Affil_{Target,Acq} + controls + \varepsilon)$

Models 11 and 12 are similar to model 10 except $\beta_4 Bull * Affil_{target,Acq}$ variables are replaced by dummy variables both target and acquirer affiliation and M&AVol dummy variable in model 11 and RegChange dummy variable in model 12.

Relative recommendations

I run Models 1 - 12 on relative recommendations as well. The models are formed as presented above, separately for both target- and acquirer-affiliation and Top15 banks dummy. These regressions are run to see whether affiliated analysts issue overly optimistic or pessimistic recommendations compared to unaffiliated analysts. These models estimate the probability of a relative recommendation that has values +1 (more optimistic), -1 (less optimistic) or 0 (the same level).

Recommendation revisions

I run Models 1-12 on recommendation revisions to see how affiliation affects recommendation revisions. The models are formed as presented above, separately for both target- and acquirer-affiliation and Top15 banks dummy. These models estimate the probability of a recommendation revision that has values -1 (downgrade), +1 (upgrade) and 0 (no change).

5. Results

My results are presented in this section. I start by presenting the results related to absolute recommendation levels. Then I proceed to the relative recommendations and conclude this section by reporting results for the analysis on recommendation revisions. I start each section by presenting descriptive and summary data and proceed to regression analysis results. I report regression parameter estimates as coefficients not as odds ratios, even though odds ratios are presented for a part of the results to get a better understanding of the magnitude of the coefficients. The coefficients associated with explanatory variables are estimators of the change in the log odds of the dependent caused by a unit change in the independent. Positive (negative) b coefficients indicate that the explanatory variable increases (decreases) the log odds of the dependent. The odds ratios in turn are estimators of the factor by which the odds(outcome more severe than *i*) change for a one-unit change in the explanatory variable. An odds ratio grater (smaller) than 1 means that the unit change in the independent variable increases (decreases) the odds(outcome more severe than *i*).

The expected sign in each regression result table refers to the expected sign of the estimated coefficients based on my hypotheses presented in chapter 3. For example, an expected negative sign is marked as - and refers to a situation where I expect based on my hypotheses that the estimated coefficient has a negative, i.e. diminishing, effect on the odds of the dependent variable being in higher class versus the combined lower classes.

5.1. Absolute recommendation levels

5.1.1. Descriptive and summary data

Table 5.1 below presents the minimum, mean and maximum recommendations by affiliated and unaffiliated analysts. As shown in table 5.1 below, target-affiliated analysts' mean and median recommendations are below those of both unaffiliated and acquirer-affiliated analysts' in my sample. In addition, the mean value of acquirer-affiliated analysts' recommendations is above that of unaffiliated analysts'. These results suggest that there might be evidence that acquirer-affiliated analysts issue more optimistic "Strong buy" and "Buy" recommendations than unaffiliated and target-affiliated analysts. In addition, results presented in table 5.1 suggest that target-affiliated analysts issue more pessimistic "Strong sell" and "Sell" recommendations about the acquirer than acquirer-affiliated and unaffiliated analysts.

TABLE 5.1: Minimum, mean and maximum values for absolute recommendation levels divided by analyst affiliation

Affiliation	Min	Mean	Median	Max	N
Target	1	3.338	3	5	153
Acquirer	1	3.883	4	5	236
Unaffiliated	1	3.599	4	5	5 889
Total					6 278

Table 5.2 on page 63 shows the distribution of the recommendations by analyst affiliation and quarters surrounding the M&A deal announcement. Also the percentage shares of each recommendation level by analyst affiliation are reported. Percentages in table 5.2 suggest that in my sample target-affiliated analysts have issued nearly double as much "Strong sell" recommendations as unaffiliated analysts and the consensus. In contrast, acquirer-affiliated analysts have issued clearly less "Strong sell" and "Sell" recommendations than unaffiliated analysts. In addition, acquirer-affiliated analysts have issued about ten percents more "Strong buy" recommendations than target-affiliated analysts, unaffiliated analysts and the consensus.

As can be seen from table 5.2, recommendations are fairly evenly distributed before and after the M&A deal announcement. For acquirer-affiliated analysts and unaffiliated analysts, there

are slightly more recommendations issued after the deal announcement though, 57 percents and 52 percents respectively. In contrast, target-affiliated analysts have issued 56 percent of their recommendations about the acquirer prior the deal announcement. Despite of 72 recommendations, all recommendations have been issued on a different quarter than the original M&A announcement.

TABLE 5.2 The distribution of absolute recommendations into quarters for all deals data. Panel A shows target affiliated recommendations, panel B acquirer affiliated, panel C unaffiliated and panel D total distribution of recommendations.

Panel A: Target-affiliated recommendations

Quarter/ Recommendation	-4	-3	-2	-1	1	2	3	4	Total	% of total
1	2	3	5	3	4	0	2	1	20	13.1%
2	5	2	2	2	2	1	0	2	16	10.1%
3	5	10	3	5	4	5	5	3	40	26.5%
4	9	4	5	2	4	5	5	2	36	23.5%
5	5	3	5	6	3	11	7	1	41	26.8%
Total	26	22	20	18	17	22	19	9	153	

Panel B: Acquirer-affiliated recommendations

Quarter/ Recommendation	-4	-3	-2	-1	0	1	2	3	4	Total	% of total
1	1	2	0	0	0	3	0	1	2	9	3.8%
2	4	4	0	3	0	3	1	1	2	18	7.6%
3	7	8	9	6	0	6	7	9	5	57	24%
4	4	4	3	10	0	15	6	7	13	63	26.6%
5	6	5	11	14	0	13	17	12	12	90	38%
Total	22	23	23	33	0	40	31	30	34	236	

Panel C: Unaffiliated recommendations

Quarter / Recommendation	-4	-3	-2	-1	0	1	2	3	4	Total	% of total
1	51	38	47	44	4	55	60	58	49	406	6.9%
2	53	62	82	74	2	96	86	66	86	607	10.3%
3	168	191	218	211	21	195	215	187	196	1 602	27.2%
4	152	195	211	189	23	233	182	221	202	1 608	27.3%
5	166	225	196	212	21	238	210	203	195	1 666	28.3%
Total	590	711	754	730	71	817	753	735	728	5 889	

Panel D: Total recommendations

Quarter / Recommendation	-4	-3	-2	-1	0	1	2	3	4	Total	% of total
1	54	43	52	47	4	62	60	61	52	435	6.9%
2	62	68	84	79	2	101	88	67	90	641	10.2%
3	180	209	230	222	21	205	227	201	204	1 699	27.1%
4	165	203	219	201	23	252	193	233	217	1 707	27.2%
5	177	233	212	232	21	254	238	222	208	1 797	28.6%
Total	638	756	797	781	71	874	806	784	771	6 278	

FIGURE 3: Analyst average recommendations for acquirer firms by quarter.

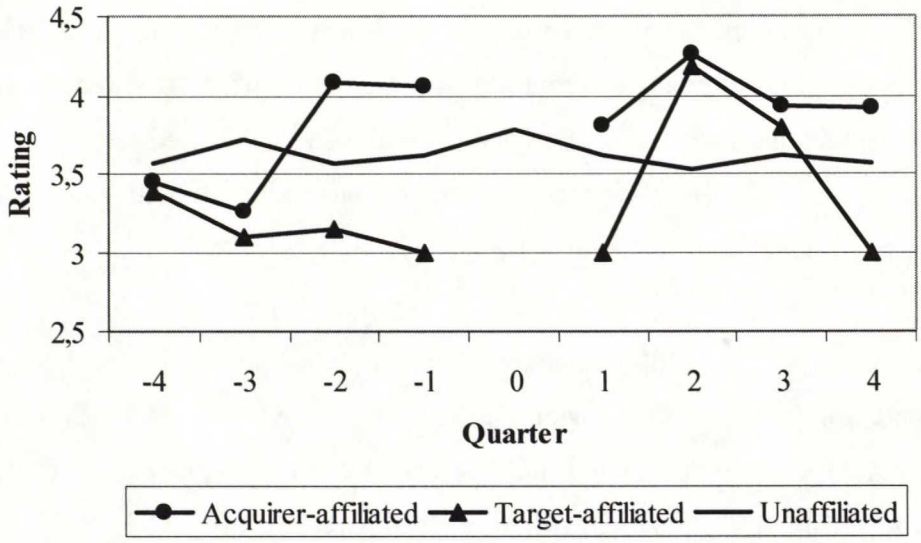


Figure 3 plots acquirer-affiliated, target-affiliated and unaffiliated analysts' recommendations for acquirer firms for the two-year period surrounding the announcement of the M&A deal. Target-and acquirer-affiliated analyst recommendations were not issued during quarter 0. Quarters are presented in X axis and quarter 0 represents M&A deal announcement quarter.

Figure 3 presents the average recommendations by each analyst group by quarters. Results presented in figure 3 are in line with the results of tables 5.1 and 5.2. and suggest that affiliated analysts recommendation issuing behaviour follows my hypotheses of acquirer-affiliated analysts issuing more optimistic "Strong buy" and "Buy" recommendations surrounding the M&A deal announcement. In addition, there is a clear upgrade in the acquirer-affiliated analysts' recommendations between quarters -3Q and -2Q, and acquirer-affiliated analysts' recommendations stay on the upgraded level nearly whole period after the M&A deal as well. There seems to be a slight downgrade during quarter +2Q, but the acquirer-affiliated analysts' recommendation level does not fall into the level prior the upgrade during quarter -3Q.

The behaviour of target-affiliated analysts in figure 3 seems to back up my hypotheses of target-affiliated analysts downgrading acquirer stock before stock exchange ratio setting and upgrading acquirer stock after the exchange ratio has been decided. The results presented in figure 3 imply that target-affiliated analysts issue lower recommendation about acquirer's stock during quarters -3Q and -1Q and then sharply upgrade the stock during quarter +2Q after the deal has been announced. Target-affiliated analysts' recommendations seem to revert to the original level quite rapidly during quarters +3Q and +4Q which suggests that the

upgrade in quarter 1Q may not represent their honest opinion about the acquirer. However, the time period between the quarters +3Q and +4Q and the M&A announcement date is quite long and thus there can be additional information affecting the target-affiliated analysts' recommendations. On the other hand, it can be assumed that also unaffiliated analysts would react similarly to bad news. However, their recommendations are quite steady during the time period between quarters -4Q and +4Q.

The pattern of acquirer- and target-affiliated analysts' recommendations in figure 3 suggests that the recommendation levels and revisions might be related to a specific quarter surrounding the M&A announcement. Thus I add interaction terms for quarters from -4Q to +4Q and both acquirer-affiliation and target-affiliation into my regression models.

The yearly division of the recommendations is presented in table 5.3. Recommendations are allocated mainly to years onwards from the year 2000 since there are more M&A deals relating to those years compared to the early years in my sample. The most interesting issue in table 5.3 is the distribution of recommendations into different categories. A study by Kadan et al. (2008), reports that the regulation changes in the USA converted analysts' recommendation scale from five category scale to three category scale after the new regulations from year 2002 onwards. There is no similar effect in my data. On the contrary, the scale has changed from three categories into five during years 1997 and 1998 and stayed as a five category scale regardless of the regulation changes during 2003. It is interesting to find such a different result compared to the USA since the new regulation frameworks entailed quite similar changes in both regions and the same banks are more or less operating in both continents.

TABLE 5.3. The yearly division of analysts' recommendations

Year / Recommendation	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	4	16	26	22	30	48	33	31	34	48	72	53	18
2				1	31	115	106	84	66	65	88	67	18
3	15	49	76	81	108	181	238	113	143	249	232	161	53
4				2	102	334	348	179	138	203	227	129	45
5	8	56	98	88	144	275	216	102	96	216	242	194	62
Grand Total	27	121	200	194	415	953	941	509	477	781	861	604	196

Table 5.4 presents the recommendation distribution by quarters and affiliation for stock financed deals. Stock deal data is presented because the stock value has an effect on the deal terms and price in stock deals contrary to cash deals and thus analysts' recommendations on acquirer's stock can be used as strategic tools in stock financed deals.

There are 1 564 stock financed deals in my sample. 36 percent of target-affiliated and 22 percent of acquirer-affiliated recommendations have been issued surrounding stock-financed deals. Here the deal is considered as a stock deal if at least 50 percent of stock financing is used. There are quite large differences when the stock deal data is compared to the same data for all deals in the sample (see table 5.2). The largest difference seems to be that target-affiliated analysts issue less "Strong sell" and "Hold" recommendations in stock deals and that acquirer-affiliated analysts issue more "Strong sell" and "Sell" recommendations in stock deals. For example, 13,1% of target-affiliated analysts' recommendations are "Strong sell" recommendations in all data sample but for stock financed data the percentage is merely 3,6%. The largest difference in acquirer-affiliated analysts' recommendations can be seen in the percentage share of "Sell" recommendations. For stock financed deals, 20,8% of acquirer-affiliated analysts' recommendations are "Sell" recommendations compared to the percentage of merely 7,6% "Sell" recommendations for all stock data. Unaffiliated analysts' recommendations are quite near the levels presented in table 5.2.

The reasons behind the deviating results might be, for example, that target-affiliated analysts try to maximise the deal price by issuing higher recommendations about the acquirer' share. This would both benefit their customer and maximise banking fees. Acquirer-affiliated analysts in turn might try to maximise their own reputational benefits by anticipating the forthcoming drop in acquirer's share price after the announcement of the M&A deal.

TABLE 5.4: Absolute recommendation distribution into quarters for stock deal data. Panel A shows target affiliated recommendations, panel B acquirer affiliated, panel C unaffiliated and panel D total distribution of recommendations.

Panel A: Target-affiliated recommendations

Quarter / Recommendation	-4	-3	-2	-1	1	2	3	4	Total	% of total
1			1					1	2	3,6 %
2	2	2	1			1		1	7	12,5 %
3	2	1			1	2			6	10,7 %
4	5	3	3	2	3	3	3	2	24	42,9 %
5	4		1	3	1	5	3		17	30,4 %
Total	13	6	6	5	5	11	6	4	56	

Panel B: Acquirer-affiliated recommendations

Quarter / Recommendation	-4	-3	-2	-1	1	2	3	4	Total	% of total
1	1				2				3	5,7 %
2	2	2		2	2	1	1	1	11	20,8 %
3	1		1	1	2	1	2	2	10	18,9 %
4	1	1		2	2	1	1	4	12	22,6 %
5	2	1		3	2	5	3	1	17	32,1 %
Total	7	4	1	8	10	8	7	8	53	

Panel C: Unaffiliated recommendations

Quarter / Recommendation	-4	-3	-2	-1	1	2	3	4	Total	% of total
1	14	13	12	15	17	16	18	18	123	8,4 %
2	20	10	18	24	26	29	18	25	170	11,6 %
3	40	50	56	43	34	37	44	56	360	24,6 %
4	37	46	53	42	64	51	64	51	408	27,9 %
5	27	54	50	51	49	62	57	51	401	27,4 %
Total	138	173	189	175	190	195	201	201	1 462	

5.1.2. Regression results

This section presents my ordered regression results for absolute recommendation levels. Results related to analyst affiliation, deal value and reputation are tabulated in table 5.5. Results related to deal timing are presented in table 5.6 and results related to dynamic analyst behaviour surrounding M&A deal announcement are presented in tables 5.7 and 5.8. In all tables, panel A presents the result related to the acquirer-affiliation and Panel B the results related to target-affiliation.

As can be seen from table 5.5, acquirer-affiliation coefficients are all positive and for models 1 and 5 they are statistically significant at 1% level. The positive coefficient in model 1 means that if an analyst is acquirer-affiliated, the log odds of issuing a higher recommendation increase by 0,433. This coefficient converts to an odds ratio of 1,54 which in turn means that the odds of recommendation being on a higher level compared to the combined lower categories is 1,54 times as large for recommendations issued by acquirer-affiliated analysts than for other analysts. These results imply that acquirer-affiliated analysts issue more high category recommendations and give support to my hypotheses of acquirer-affiliated analysts issuing more positive "Strong buy" and "Buy" recommendations and are in line with the results presented in figure 3.

The variable deal value has statistically significant positive coefficients in all models in table 5.5, which implies that the odds of issuing a higher recommendation increases when deal value increases. However, the deal value variable does not discriminate between affiliated and unaffiliated analysts recommendations. Thus the interaction term $Affil_{Acq}$*DealVal is formed to be able to see whether the acquirer-affiliated analysts issue higher recommendations if the deal value is larger. The interaction term has a positive coefficient as well, even though it is not statistically significant.

The control variable SameSic has negative and significant coefficients for all models reported in table 5.5. These results imply that the odds of issuing a higher recommendation decrease if the firms participating in the deal are from the same industry group. For example, the SameSic coefficient -0,107 in model 1 converts to an odds ratio of 0,899 which means that the odds of issuing a higher recommendation is 0,899 times higher if the firms are from the same industry compared to a deal where the firms are from separate industries. In addition, control

variable size (acquirer market value) has positive and significant coefficients which suggest that the larger the acquirer, the higher are the recommendations about its stock.

The negative coefficient on $Affil_{Acq}$*Stock suggests that stock financing might result in lower recommendations by acquirer-affiliated analysts, which contradicts hypothesis that acquirer-affiliated analysts issue higher recommendations when a deal is stock finances to sweeten the terms for their client firms. On the contrary, the results suggest that my hypothesis of affiliated analysts issuing lower recommendations prior to deal announcement to improve their reputation might be valid. However, the coefficient is not statistically significant.

TABLE 5.5 Panel A. Results related to affiliation, deal value and reputation. Panel A presents the coefficients estimated and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Value*-variable is the natural logarithm of the deal value, *Stock* variable takes on value 1 if the deal was at least 50% stock financed, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors are in parentheses. *Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A Variable	Exp. Sign	Model 1	Model 2	Model 5
$Affi_{Acq}$	+	0,433***	0,182	0,552***
		(0,121)	(0,398)	(0,131)
Value	+	0,033**	0,025**	0,026**
		(0,012)	(0,012)	(0,012)
$Affil_{Acq}$*DealVal	+		0,049	
			(0,071)	
Stock	+			0,005
				(0,057)
$Affil_{Acq}$*Stock	+			-0,506
				(0,325)
SameSic	?	-0,107**	-0,011**	-0,109**
		(0,049)	(0,050)	(0,049)
Size		0,022*	0,022*	0,022*
		(0,012)	(0,012)	(0,012)
MBVal		-0,029	-0,030**	-0,029**
		(0,012)	(0,012)	(0,012)
Debt		0,002	0,002	0,002
		(0,001)	(0,001)	(0,001)
Number of observations		6 278	6 278	6 278
Chi^2		42,26	44,3	41,67
Significance		0,0001	0,0001	0,0001

Panel B next page presents the results for target-affiliation, deal value and reputation. The negative coefficients on $Affil_{Target}$-variable in models 1 and 5 suggest that target-affiliation decreases the log odds of a higher recommendation level. For example, the coefficient on variable $Affil_{Target}$ in model 5 converts to an odds ratio of 0,501 which means that the odds of issuing a higher recommendation increases by a factor of 0,501 if the $Affil_{Target}$ variable goes from 0 to 1. In other words, the odds of issuing a higher recommendation decrease to approximately half if the recommendation is issued by a target-affiliated analyst compared to a recommendation that is issued by other than target-affiliated analyst. These results provide support for my hypothesis that target-affiliated analysts issue less optimistic recommendations about the acquirer.

Interestingly, however, the coefficient on target-affiliation variable is positive and statistically significant in model 2. This is probably caused by the interaction variable $Affil_{Target}$*DealVal which is added to the model. The $Affil_{Target}$*DealVal variable has a statistically significant negative coefficient. Thus for a one unit increase in the $Affil_{Target}$*DealVal –variable the odds that a recommendation is higher increase by a factor of 0,739 (coefficient -0,303). In other words, the results suggest that target-affiliated analysts issue lower recommendations if the deal value is larger. This result gives support to my hypothesis that the bias in affiliated analysts' recommendations is larger when deal value is larger. The hypothesis is based on the assumption that affiliated analysts' incentives to bias their research might be grater in large deals since deal size is correlated with M&A fees. The positive coefficient on $Affil_{Target}$ in model 2 imply that for other than large deals, the odds that the recommendation is higher increase by a factor of 4,560 if the recommendation is issued by a target-affiliated analyst.

The coefficient on $Affil_{Target}$*Stock is positive and significant. Thus stock financing of at least 50 percents increases the odds that a target-affiliated analyst issues a higher recommendation by a factor of 3,050. The results suggest that target-affiliated analysts issue higher recommendations when stock financing is used. This result confirms the results presented in table 5.4 in page 68 and might be caused by target-affiliated analysts aim to maximise deal value and benefit both their client and the bank. However, most of my hypotheses relate the form of payment with report timing variables which are studied later in this section.

Control variable SameSic has negative and significant coefficients for target-affiliation as it did for acquirer-affiliation. In addition, acquirer's market-to-book ratio has negative and

significant coefficients. Regressions are run on Top15 explanatory variable as well, but the results are statistically insignificant and thus not tabulated. Regressions are run on *Hostile* explanatory variable as well to see if the affiliated analysts' behaviour is different in hostile deals. The results are insignificant and are not tabulated.

TABLE 5.5 Panel B. Results related to affiliation, deal value and reputation. Panel A presents the coefficient estimated and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise, *Value*-variable is the natural logarithm of the deal value, *Stock* variables takes on value 1 if the deal was at least 50% stock financed, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. *Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B Variable	Exp. Sign	Model 1	Model 2	Model 5
$Affil_{Target}$	-	-0,264*	1,525**	-0,692**
		(0,167)	(0,600)	(0,219)
Value	?	0,031**	0,031**	0,027**
		(0,012)	(0,012)	(0,012)
$Affil_{Target}$*DealVal	-		-0,303***	
			(0,099)	
Stock	?			-0,044
				(0,057)
$Affil_{Target}$*Stock	?			1,115***
				(0,309)
SameSic	?	-0,109**	-0,122**	-0,112**
		(0,049)	(0,049)	(0,049)
Size		-0,0002	0,017	0,019
		(0,003)	(0,012)	(0,012)
MBVal		-0,029**	-0,027**	-0,027**
		(0,012)	(0,012)	(0,012)
Debt		0,002	0,002	0,002
		(0,001)	(0,001)	(0,001)
Number of observations		6 278	6 278	6 278
Chi^2		31,93	41,89	37,76
Significance		0,0041	0,0002	0,0001

Results related to deal timing are presented in the table 5.6 next page. The coefficients on acquirer-affiliation are positive for this set of models as well and thus the results suggest that acquirer-affiliated analysts issue higher recommendations about the acquirer compared to the other analysts in my sample. However, the statistically significant negative coefficient on variable RegChange*$Affil_{Acq}$ suggests that the log odds of a higher recommendation decreases if the recommendation is issued by an acquirer-affiliated analyst after the European regulation changes in 2003. The coefficient converts to an odds ratio of 0,569 which means that the odds of a higher recommendation issued by an acquirer-affiliated analyst versus the combined lower recommendation categories is nearly the half of the odds compared to a recommendation issued prior the recommendation change. The variable RegChange has a negative and statistically significant coefficient as well. These findings suggest that the recommendations issued after the European regulation changes are lower than the recommendations issued before the recommendation changes. These results provide support for my hypothesis that the increased regulation and disclosure requirements resulted in lower and thus probably less biased acquirer-affiliated analyst recommendations.

The positive coefficient on variable HighVol suggest that the recommendations issued by other than acquirer-affiliated analysts during high M&A volume periods are higher than the recommendations issued during other time periods. The coefficient on acquirer-affiliation related interaction term is positive as well but not statistically significant. The results for bullish market environment suggest similarly that other than acquirer-affiliated analysts seem to issue higher recommendations during market upturns. Again the coefficient on acquirer-affiliation is in line with the coefficient on bull-variable but is not statistically significant.

TABLE 5.6 Panel A. Results related to deal timing. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Bull* refers to the market situation and it takes on value 1 if the deal is done during bull market (years 1996-2000 and 2004-2006), 0 otherwise. *HighVol* variable takes on value 1 if the deal is done during high M&A volume period (years 2000 and 2004-2006), 0 otherwise. *RegChange* takes on value 1 if deal is done after the European regulation changes (2003), 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A Variable	Exp. Sign	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
$Affil_{Acq}$	+	0,433**	0,444***	0,425***	0,267	0,312	0,650***
		(0,122)	(0,121)	(0,121)	(0,251)	(0,216)	(0,144)
Bull	+	0,379***			0,372***		
		(0,379)			(0,053)		
HighVol	+		0,252***			0,245***	
			(0,050)			(0,050)	
RegChange	-			-0,161***			-0,139***
				(0,049)			(0,050)
Bull*$Affil_{Acq}$	+				0,210		
					(0,286)		
HigVol*$Affil_{Acq}$	+					0,198	
						(0,260)	
RegChange*$Affil_{Acq}$	-						-0,564**
							(0,252)
SameSic	?	-0,051	-0,091*	-0,139***	-0,050	-0,089*	-0,133***
		(0,050)	(0,049)	(0,050)	(0,050)	(0,049)	(0,050)
Size		0,044***	0,040***	0,022*	0,044***	0,040***	0,023**
		(0,013)	(0,013)	(0,012)	(0,013)	(0,013)	(0,012)
MBVal		-0,033***	-0,034***	-0,022*	-0,033***	-0,035***	-0,022*
		(0,012)	(0,012)	(0,012)	(0,012)	(0,012)	(0,012)
Debt		0,000	0,001	0,003*	0,001	0,001	0,002*
		(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)
Number of observations		6 278	6 278	6 278	6 278	6 278	6 278
Chi^2		90,46	65,59	49,2	90,56	66,24	57,67
Significance		0,0000	0,0001	0,0001	0,0000	0,0001	0,0001

Panel B on page 75 presents the deal timing related results for target-affiliation. $Affil_{Target}$ has a negative coefficient in all models except model 10. Only the coefficient in model 7 is statistically significant. However, the results suggest that target-affiliated analysts issue lower recommendations about acquirer's stock than other analysts. The positive coefficient in model 10 is statistically insignificant as the negative coefficient on Bull* $Affil_{Target}$.

However, the coefficient on Bull-variable is positive and statistically significant at 1% level. The Bull-variable's coefficient in model 10 converts to an odds ratio of 1,487 which means

that for a one unit increase in Bull-variable, the odds of a higher level recommendation versus combined lower level recommendations is 1,487 times grater. Thus the results imply that other than target-affiliated analysts issue higher recommendations during Bull-markets compared to other market conditions which confirms the results presented in panel A.

HighVol variable has a positive and statistically significant coefficient as was the case in panel A. The result suggests that the recommendations issued by other analysts than target-affiliated analysts during high M&A deal volume period are more probably of a higher category than recommendations issued during other time periods. The coefficient on interaction term between target-affiliation and HighVol is negative which suggests that target-affiliated analysts issue lower recommendations during high M&A volume periods compared to other periods. However, the coefficient is not statistically significant.

As in panel A, the coefficient on regulation change-variable is negative and significant. Thus the results on target-affiliation related model suggest that the log odds of a higher category recommendation versus the lower categories deteriorate if the recommendation is issued by other than target-affiliated analyst after the European regulation change in 2003. The coefficient on interaction term between target-affiliation and regulation change is negative as well but not statistically significant. These results imply that recommendations issued after regulation change are lower than the ones issued prior the change.

Regressions are run on *Top15* explanatory variable as well, but the results are statistically insignificant and thus are not tabulated here. Regressions are run on *Hostile* explanatory variable as well to see if the affiliated analysts' behaviour is different in hostile deals. The results are insignificant and are not tabulated.

TABLE 5.6 Panel B. Results related to deal timing. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Bull* refers to the market situation and it takes on value 1 if the deal is done during bull market (years 1996-2000 and 2004-2006), 0 otherwise. *HighVol* variable takes on value 1 if the deal is done during high M&A volume period (years 2000 and 2004-2006), 0 otherwise. *RegChange* takes on value 1 if deal is done after the European regulation changes (2003), 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B Variable	Exp. Sign	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
$Affil_{Target}$	-	-0,273*	-0,254	-0,259	0,190	-0,211	-0,096
		(0,165)	(0,164)	(0,165)	(0,354)	(0,262)	(0,213)
Bull	+	0,383***			0,397***		
		(0,053)			(0,053)		
HighVol	+		0,252***			0,254***	
			(0,050)			(0,050)	
RegChange	-			-0,170***			-0,161***
				(0,049)			(0,050)
$Bull*Affil_{Target}$	+				-0,607		
					(0,401)		
$HighVol*Affil_{Target}$	+					-0,072	
						(0,336)	
$RegChange*Affil_{Target}$	-						-0,376
							(0,335)
SameSic	?	-0,050	-0,091*	-0,140***	-0,049	-0,090*	-0,140***
		(0,050)	(0,049)	(0,050)	(0,050)	(0,049)	(0,050)
Size		0,040***	0,035***	0,018	0,041***	0,036***	0,018
		(0,013)	(0,013)	(0,012)	(0,013)	(0,013)	(0,012)
MBVal		-0,033***	-0,034***	-0,022*	-0,033***	-0,034***	-0,022*
		(0,012)	(0,012)	(0,012)	(0,012)	(0,012)	(0,012)
Debt		0,001	0,001	0,003**	0,001	0,001	0,003**
		(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)
Number of observations		6 278	6 278	6 278	6 278	6 278	6 278
Chi^2		80,09	54,78	38,03	84,11	55,02	38,89
Significance		0,0000	0,0001	0,0001	0,0000	0,0001	0,0001

The results related to analysts' recommendation behaviour surrounding the M&A deal announcement are reported in table 5.7 on page 77. Acquirer-affiliation has positive coefficients in both models 3 and 4 even though the coefficient in model 3 is not statistically significant. However, the coefficient on $Affil_{Acq}$*After interaction term is positive and significant. The coefficient on variable $Affil_{Acq}$*After converts to an odds ratio of 1,528 which implies that the odds of a higher level recommendation are 1,528 times grater if the acquirer-affiliated recommendation is issued after the M&A deal announcement.

In addition, the statistically significant negative coefficient on $Affil_{Acq}$*Before –variable confirms the result of model 3, as expected. These results suggest that acquirer-affiliated analysts issue lower recommendations prior the deal announcement and higher recommendations after the deal announcement. Thus the results give support for my hypotheses that acquirer-affiliated analysts issue higher recommendations after the deal announcement. However, the results contradict my hypothesis of acquirer-affiliated analysts' aim to improve the deal terms for their client firm by issuing higher recommendations prior the deal announcement. Additionally, the results are not in line with the selection bias hypotheses either. In addition, when the models 3 and 4 are run on stock deal data, the signs on variables $Affil_{Acq}$*Before and $Affil_{Acq}$*After are in line with the ones reported for all data sample. However, the coefficients are not statistically significant. Nevertheless, the results might provide support for my hypothesis that affiliated analysts aim to enhance their reputation by downgrading acquirer's stock prior the deal based on their inside information announcement as discussed in the literature section.

Control variable signs are in line with the previous results presented in this section.

TABLE 5.7 Panel A. Results related to the analysts' recommendation issuing behaviour surrounding M&A deal announcement. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *After* and *Before* are dummy variables for the time of the report issuance related to the M&A deal announcement. *After* variable takes on value 1 if the report has been announced after the deal announcement, 0 otherwise. *Before* variable takes on value 1 if the report has been issued prior the deal announcement, 0 otherwise. *SameSic* variable takes on the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A Variable	Exp. Sign	**All data** Model 3	**All data** Model 4	**> 50 % Stock** Model 3	**> 50 % Stock** Model 4
$Affil_{Acq}$	+	0,208	0,616***	-0,390	0,120
		(0,185)	(0,155)	(0,451)	(0,357)
After	?	-0,016		0,068	
		(0,046)		(0,092)	
Before	?		0,019		-0,463
			(0,046)		(0,598)
$Affil_{Acq}$*After	+	0,424*		0,559	
		(0,242)		(0,579)	
$Affil_{Acq}$*Before	+		-0,398*		-0,463
			(0,244)		(0,598)
SameSic	?	-0,113**	-0,113**	0,241*	0,242**
		(0,049)	(0,049)	(0,123)	(0,123)
Size		0,027**	0,023*	-0,023	-0,032
		(0,012)	(0,012)	(0,023)	(0,022)
MBVal		-0,028**	-0,028**	-0,128**	-0,127***
		(0,012)	(0,012)	(0,026)	(0,026)
Debt		0,002	0,002	-0,001	-0,001
		(0,001)	(0,001)	(0,003)	(0,003)
Number of observations		6 278	6 278	1 564	1 564
Chi^2		40,55	40,34	29,51	29,03
Significance		0,0001	0,0001	0,0003	0,0003

Panel B next page presents the results of analysts' recommendation issuing behaviour surrounding M&A deal announcement for target-affiliated analysts. The results are quite similar for target-affiliated analysts as they were for acquirer-affiliated analysts.

The positive and significant coefficient on variable $Affil_{Target}$*After suggests that target-affiliated analysts issue higher recommendations after the deal announcement. In addition, the coefficient on variable $Affil_{Target}$*Before in model 4 is negative and statistically significant at 10% level, which confirms the results of model 3. Thus the results suggest that the odds of a target-affiliated analyst issuing a higher recommendation decreases when the recommendation is issued before the deal announcement. These results provide support for my hypothesis that target-affiliated analysts' aim to enhance the deal terms for their client firm by issuing lower recommendations prior and higher recommendations after the deal announcement about acquirer's stock. In addition, when models 3 and 4 are run on stock deal data, the coefficients on variables $Affil_{Target}$*After and $Affil_{Target}$*Before are in line with the coefficients on models run on all data. However, the coefficients are not statistically significant. Nevertheless, these results provide support for my hypothesis that affiliated analysts target-affiliated analysts aim to enhance the deal terms for their client firms by issuing lower recommendations before and higher recommendations after the deal announcement.

Interestingly the coefficient on $Affil_{Target}$-variable is positive, even though not statistically significant, in model 4. The sign change suggests that the lowering effect of before-interaction variable is stronger than that of target-affiliation variable and that the timing of the recommendation has an effect on its level.

TABLE 5.7 Panel B: Results related to the analysts' recommendation issuing behaviour surrounding M&A deal announcement. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *After* and *Before* are dummy variables for the time of the report issuance related to the M&A deal announcement. *After* variable takes on value 1 if the report has been announced after the deal announcement, 0 otherwise. *Before* variable takes on value 1 if the report has been issued prior the deal announcement, 0 otherwise. *SameSic* variable takes on the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B Variable	Exp. Sign	**All data** Model 3	**All data** Model 4	**>50 % Stock** Model 3	**>50 % Stock** Model 4
$Affil_{Target}$	-	-0,557**	0,074	0,063	0,423
		(0,220)	(0,245)	(0,294)	(0,295)
After	?	-0,016		0,072	
		(0,046)		(0,093)	
Before	?		0,018		-0,057
			(0,046)		(0,093)
$Affil_{Target}$*After	+	0,699**		0,428	
		(0,330)		(0,408)	
$Affil_{Target}$*Before	-		-0,059*		-0,318
			(0,330)		(0,410)
SameSic	?	-0,115**	-0,114**	0,214*	0,217*
		(0,049)	(0,049)	(0,127)	(0,127)
Size		0,017	0,018	-0,031	-0,021
		(0,012)	(0,012)	(0,022)	(0,023)
MBVal		-0,028**	-0,028**	-0,123***	-0,123***
		(0,012)	(0,012)	(0,027)	(0,027)
Debt		0,002	0,002	-0,001	-0,001
		(0,001)	(0,001)	(0,003)	(0,003)
Number of observations		6 278	6 278	1 564	1 564
Chi^2		30,15	29,01	33,96	32,47
Significance		0,0002	0,0003	0,0001	0,0001

Table 5.8 on page 82 and 84 presents results on dynamic analysts' recommendation revision behaviour surrounding the M&A deal announcement. I have divided the time periods *before* and *after* into quarters to be able to study the analyst behaviour surrounding the deal announcement more precisely. I have used two reference categories for the Quarter-dummy variables, -4Q and 0Q. -4Q refers to a time period 4 quarters before the M&A deal announcement and 0Q is the time period when the M&A deal has been announced. -4Q can be seen as a neutral quarter, when affiliated analysts' recommendations are on nearly the same level as unaffiliated analysts' recommendations (see figure 3) and the deviation seems to start later. 0Q is used as a reference category to be able to measure the difference in

recommendations compared to the M&A deal announcement period levels. Results for control variables are in line with the previous models but have not been tabulated to save space. The quarterly deviations in analyst recommendations are studied for both all data (6 278 recommendations) and stock deal data consisting of deals with at least 50 percent stock financing (1 564 recommendations). There are multicollinearity issues with the model run on stock data and the model can not be estimated separately for both reference categories mentioned above. Thus only one set of results is presented.

Panel A on page 82 presents the dynamic analysts' recommendation behaviour related to acquirer-affiliation. In all data results, there are statistically significant coefficients on -3Q, -2Q*$Affil_{Acq}$, -1Q*$Affil_{Acq}$, 2Q*$Affil_{Acq}$ and 4Q*$Affil_{Acq}$ variables for the reference category -4Q. All statistically significant coefficients are positive. This means that relative to -4 quarter, the odds of issuing a higher recommendation versus the combined lower categories increases for all the mentioned variables. For example, the highest of the reported coefficients, the coefficient on 2Q*$Affil_{Acq}$-variable, converts to an odds ratio of 3,900. Thus the odds of an acquirer-affiliated analysts' issuing a higher category recommendation increases by a factor of 3,900 if the recommendation is issued during quarter 2Q after the M&A deal announcement.

The results suggest that acquirer-affiliated analysts issue higher recommendations during quarters -2Q, -1Q and +2Q than other analysts compared to the recommendations they issued during quarter -4. These results are in line with my hypotheses that acquirer-affiliated analysts issue high level recommendations both prior and after the deal announcement.

Model 6 provides similar results for all data on reference category 0Q as well. In addition, the coefficients are larger for all statistically significant acquirer-affiliation related interaction terms compared to reference category -4Q. Contrary to reference category -4Q, also 1Q*$Affil_{Acq}$ and 4Q*$Affil_{Acq}$ -variables have statistically significant positive coefficients. The results for reference category 0Q suggest that the odds of a higher level recommendation increase when acquirer-affiliated analysts issue the recommendation during other quarters than the M&A deal announcement quarter.

Results for stock deal -data have positive coefficients for all quarters without affiliation interaction and all but one are statistically significant. These results suggest that other than

acquirer-affiliated analysts issue higher level recommendations during other quarters than quarter -4 and 0. The coefficient on $Affil_{Acq}$ is negative and statistically significant. This might result from the fact that variable -2Q*$Affil_{Acq}$ has been dropped of from the model and thus variable $Affil_{Acq}$ picks out its coefficient so to speak. Thus it can be assumed that the coefficient on -2Q*$Affil_{Acq}$ would be negative which would imply that the odds of acquirer-affiliated analysts issuing a high level recommendation decrease if the recommendation is issued during quarter -2Q prior the deal announcement. This result contradicts my hypotheses of strategic analyst behaviour and provides support for my hypothesis of affiliated analysts' aim to enhance their reputation by issuing lower recommendations based on insider information they garner about the deal in advance. The reputation improvement is based on the assumption that analysts anticipate based on historical evidence that acquirer's stock price probably deteriorates after the deal announcement.

All reported affiliation interaction terms have positive coefficients which suggest that acquirer-affiliated analysts issue high level recommendations during other quarters than -2Q. Coefficients for -1Q, 2Q and 4Q are statistically significant which confirms the results of models run on all data that the odds of an acquirer-affiliated analyst's recommendation being a higher level recommendation increases if it is issued during quarters -1Q, 2Q or 4Q. Thus the results on stock deal data suggest that acquirer-affiliated analysts issue more high level recommendations compared to other analysts in my sample during quarters -1Q prior the deal or quarters 2Q and 4Q after the deal announcement. These results give support to my hypotheses of acquirer-affiliated analysts' strategic recommendation behaviour surrounding stock financed deal announcements. However, the results that recommendations issued during quarter -2Q are lower are in line with the results presented previously in tables 5.4 and 5.7 and give support to the hypothesis of analysts' reputation building ambitions. In addition, it contradicts the selection bias hypothesis.

TABLE 5.8 Panel A. Results related to the dynamic recommendation behaviour surrounding M&A deal announcement. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Q(uarter)* refers to a set of dummy variables and takes on value 1 if the recommendation is issued during a given quarter, 0 otherwise. Negative Q variables refer to the time prior M&A deal announcement and positive Q variables to the time after deal announcement. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A		**All data Reference 4Q**	**All data Reference 0Q**	**> 50% Stock**
Variable	Exp. Sign	Model 6	Model 6	Model 6
$Affil_{Acq}$	+	-0,178 (0,390)	-0,622* (0,387)	-1,050*** (0,140)
-4Q			-0,245 (0,206)	
-3Q		0,201** (0,099)	-0,044 (0,204)	0,525*** (0,193)
-2Q		-0,008 (0,097)	-0,253 (0,202)	0,377** (0,183)
-1Q		0,078 (0,099)	-0,167 (0,203)	0,364* (0,196)
0Q		0,245 (0,206)		Dropped
1Q		0,077 (0,098)	-0,168 (0,203)	0,363* (0,189)
2Q		-0,011 (0,100)	-0,256 (0,203)	0,483** (0,195)
3Q		0,108 (0,099)	-0,137 (0,203)	0,492*** (0,187)
4Q		0,006 (0,099)	-0,239 (0,203)	0,197 (0,189)
-4Q*$Affil_{Acq}$	+		0,444 (0,549)	0,612 (0,960)
-3Q*$Affil_{Acq}$	+	-0,444 (0,549)	Dropped	0,129 (0,906)
-2Q*$Affil_{Acq}$	+	0,916* (0,556)	1,360** (0,554)	Dropped
-1Q*$Affil_{Acq}$	+	0,875* (0,498)	1,319*** (0,496)	1,257* (0,708)
1Q*$Affil_{Acq}$	+	0,553 (0,476)	0,997** (0,473)	0,120 (0,718)
2Q*$Affil_{Acq}$	+	1,361*** (0,525)	1,805*** (0,523)	2,369*** (0,742)
3Q*$Affil_{Acq}$	+	0,619 (0,514)	1,063** (0,511)	1,257 (0,809)
4Q*$Affil_{Acq}$	+	0,769* (0,488)	1,213** (0,485)	1,209** (0,531)
Controls are used		√	√	√
Number of observations		6 278	6 278	1 564
Chi^2		60,32	60,32	298,4
Significance		0,0001	0,0001	0,0000

Panel B next page presents the dynamic recommendation behaviour results for target-affiliation. For regression run on all data, there are statistically significant coefficients for variables -3Q and 2Q*$Affil_{Target}$ for the reference category of -4Q. The interaction term related to 2Q after the M&A deal announcement has a positive coefficient. These results suggest that if a target-affiliated analyst issues a recommendation about the acquirer's stock during quarter +2Q, the odds that the recommendation is of a higher category versus the combined lower categories increase. In addition, all coefficients on interaction terms prior the deal announcement are negative but statistically insignificant. These results provide support for my hypotheses that target-affiliated analysts issue more probably a high level recommendation after the M&A deal announcement and stock exchange ratio decision which would improve their client firm's gains in the M&A deal. On the other hand, this kind of recommendation behaviour aims to maximise the deal price when stock financing is used and thus the bank's interests are maximised as well.

When reference category of 0Q is used, there are only two statistically significant results. The coefficient on variable 2Q*$Affil_{Target}$ is positive which suggests that in relation to the deal announcement quarter, target-affiliated analysts issue higher level recommendations during quarter 2Q after the deal announcement. This result is in line with the results presented above. However, the statistically significant coefficient on $Affil_{Target}$-variable suggests that the dropped interaction term 1Q*$Affil_{Target}$ has a negative coefficient. This result implies that target-affiliated analysts issue lower recommendations during quarter 1Q.

Results for stock deal data have positive coefficients for all quarters without affiliation interaction and all but one are statistically significant. Thus the odds that other than target-affiliated analysts issue higher level recommendation versus the combined lower levels increases. Variable -3Q*$Affil_{Target}$ has a negative and statistically significant coefficient as well which suggests that the odds of a target-affiliated analyst to issue a high level recommendation decrease if the recommendation is issued during quarter -3Q prior the deal announcement compared to quarter -4Q. This result implies that target-affiliated analysts may issue lower recommendations about the acquirer before the deal has been announced and the stock exchange ratio decided. Coefficients on interaction terms after the deal announcement are positive except the coefficient on +4Q.

TABLE 5.8 Panel B. Results related to the dynamic recommendation behaviour surrounding M&A deal announcement. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable has discrete values ranging from 1 to 5. 1 represents "Strong sell" recommendation, 2 "Sell", 3 "Hold", 4 "Buy" and 5 "Strong buy". $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Q(uarter)* refers to a set of dummy variables and takes on value 1 if the recommendation is issued during a given quarter, 0 otherwise. Negative Q variables refer to the time prior M&A deal announcement and positive Q variables to the time after deal announcement. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B		**All data Reference -4Q**	**All data Reference 0Q**	**> 50% Stock**
Variable	Exp. Sign	Model 6	Model 6	Model 6
$Affil_{Target}$	-	-0,247	-0,928*	0,243
		(0,356)	(0,564)	(0,482)
-4Q			-0,242	
			(0,205)	
-3Q		0,205**	-0,036	0,595***
		(0,099)	(0,203)	(0,199)
-2Q		0,019	-0,222	0,433**
		(0,097)	(0,202)	(0,189)
-1Q		0,110	-0,131	0,393**
		(0,098)	(0,202)	(0,201)
0Q		0,242		Dropped
		(0,205)		
1Q		0,104	-0,137	0,372*
		(0,097)	(0,202)	(0,195)
2Q		0,001	-0,240	0,553***
		(0,100)	(0,203)	(0,203)
3Q		0,112	-0,130	0,526***
		(0,100)	(0,203)	(0,192)
4Q		0,036	-0,205	0,276
		(0,100)	(0,202)	(0,194)
-4Q*$Affil_{Target}$	?		0,681	0,270
			(0,667)	(0,660)
-3Q*$Affil_{Target}$	-	-0,646	0,035	-1,173*
		(0,492)	(0,658)	(0,769)
-2Q*$Affil_{Target}$	-	-0,278	0,403	-0,461
		(0,681)	(0,810)	(0,847)
-1Q*$Affil_{Target}$	-	-0,141	0,539	1,162
		(0,691)	(0,819)	(0,878)
1Q*$Affil_{Target}$	+	-0,681	Dropped	Dropped
		(0,667)		
2Q*$Affil_{Target}$	+	1,218**	1,899***	0,375
		(0,528)	(0,686)	(0,682)
3Q*$Affil_{Target}$	-	0,562	1,243*	0,809
		(0,563)	(0,714)	(0,748)
4Q*$Affil_{Target}$	-	-0,563	0,118	-1,205
		(0,625)	(0,764)	(0,931)
Controls used		√	√	√
Number of observations		6 278	6 278	1 564
Chi^2		50,37	50,37	56,12
Significance		0,0003	0,0003	0,0001

5.1.3. Discussion

As a whole, for the whole data sample, my results for absolute recommendations suggest that acquirer-affiliated analysts issue more high level recommendations compared to other analysts in my sample. In addition, target-affiliated analysts seem to issue more low level recommendations compared to other analysts. Thus the results give support to my hypotheses that acquirer-affiliated analysts are overly optimistic about acquirer's stock and that acquirer-affiliated analysts issue more positive "Buy" and "Strong buy" and less negative "Strong sell" and "Sell" recommendations about the acquirer. However, these results may be due to selection bias as well, as discussed in section 2.3.3. Additionally, support for hypotheses that target-affiliated analysts issue more negative "Strong sell" and "Sell" recommendations about the acquirer's stock prior the M&A deal announcement and more positive recommendations after the deal announcement is provided both for stock deals sample and for all deals sample. Hence support for target-affiliated analysts' strategic behaviour is provided. These findings are in line with the ones in Kolasinski and Kothari (2007) study.

Support for hypothesis that large deal value increases the effect of affiliation is provided especially for target-affiliation, which is in line with the findings in Kolasinski and Kothari (2007) study. In addition, evidence for my hypothesis that the European regulation change in 2003 resulted in lower recommendations is provided. Lower recommendations are issued by both affiliated and unaffiliated analysts. Interestingly, I find differing results compared to a study by Kadan et al. (2008) on the regulation changes in the US. Kadan et al. (2008) find that analyst recommendation scale has converted from five categories to three after the new regulations in 2003. Similar effect can not be seen in my results. In addition, the high volume and bull market conditions result in higher recommendations issued by at least unaffiliated analysts.

Evidence that stock financing affects affiliated analysts' recommendations is also provided. My results suggest that in my sample of deals with at least 50% stock financing, acquirer-affiliated analysts issue more low level recommendations compared to my all deals sample. My results imply in addition, that target-affiliated analysts issue more high level recommendations in deals with stock financing. These findings contradict the ones in Kolasinski and Kothari (2007) study.

Finally, my results suggest that the recommendation issuing time and quarter have an effect on the recommendation level. For both all deals sample and stock financed deals sample, my results suggest that both acquirer- and target-affiliated analysts issue lower level recommendations prior and higher level recommendations after the deal announcement. Hence evidence for target-affiliated analysts' strategic recommendation behaviour is provided. However, when model 6 is run to study the report timing quarter more precisely, evidence that acquirer-affiliated analysts issue lower level recommendations merely during quarter -2Q in stock deal sample and quarter -3Q in all deals sample is found. Coefficients on other acquirer-affiliation related quarters are positive which implies that the recommendations issued during other quarters surrounding the deal announcement are high level recommendations.

Nevertheless, acquirer-affiliated results are mixed. On the other hand, acquirer-affiliated analysts' lower level recommendations prior the deal announcement do not provide support for either the strategic behaviour hypothesis or selection bias hypothesis. On the contrary, the results imply that acquirer-affiliated analysts may try to enhance their reputation by exploiting inside information about the deal and by issuing lower recommendations about the acquirer whose stock price they assume will deteriorate after the deal announcement. Then again, the higher recommendation levels issued during quarters -1Q and 2Q provide support for the strategic recommendation behaviour hypothesis.

5.2. Relative recommendations

5.2.1. Descriptive and summary data

Table 5.9 next page presents the minimum, mean, median and maximum relative recommendations according to analyst affiliation. The results presented in table 5.9 show that in my sample acquirer-affiliated analysts seem to be more optimistic about the acquirer's stock than target-affiliated and unaffiliated analysts. The results give support for my hypotheses about acquirer-affiliated analysts' optimism.

TABLE 5.9. Minimum, median, mean and maximum relative recommendation according to analyst affiliation.

Affiliation	Min	Median	Mean	Max	N
Target	-3	0	0,023	4	153
Acquirer	-3	0	0,273	5	237
Unaffiliated	-4	0	0,003	5	5 889
Total					6 279

FIGURE 4 Analyst average relative recommendations about acquirer firms by quarter.

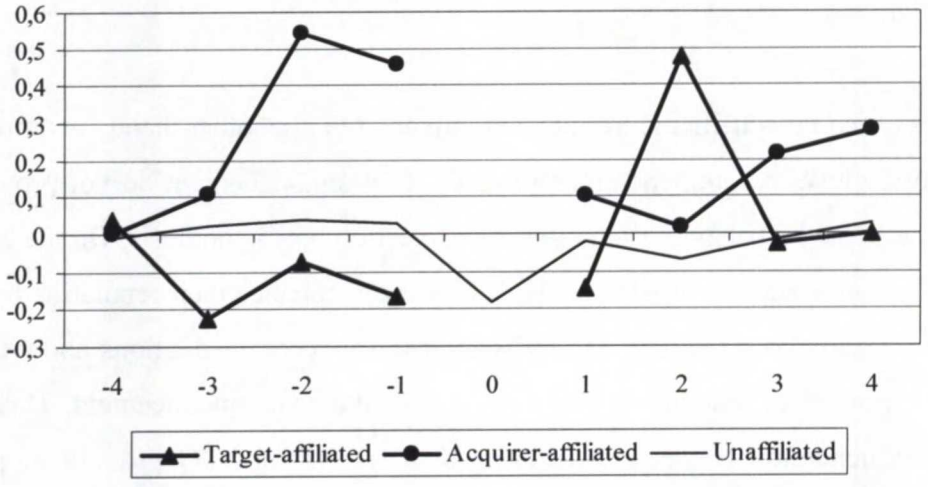


Figure 4 plots acquirer-affiliated, target-affiliated and unaffiliated analysts' relative recommendations for acquirer firms for the two-year period surrounding the announcement of the M&A deal. Target-and acquirer-affiliated analyst recommendations were not issued on quarter 0. Level zero is the neutral "consensus" level in figure 4. Quarters are presented in X axis and quarter 0 represents M&A deal announcement quarter.

Figure 4 above presents the average relative recommendations partitioned by analyst affiliation and quarter. The results suggest that on average, acquirer-affiliated analysts seem to be more optimistic about the acquirer prior the deal than target-affiliated and unaffiliated analysts in my data sample. The optimism is concentrated on the quarters preceding the M&A deal announcement, especially on quarters -2Q and -1Q in figure 4. In addition, the acquirer-affiliated analysts' recommendations return to the consensus level during quarters 1Q and 2Q after the M&A deal announcement. Target-affiliated analysts seem to be issuing relatively more negative recommendations compared to consensus during quarters -3Q, -2Q and -1Q prior the M&A deal announcement. However, results presented in figure 4 imply that target-affiliated analysts issue more optimistic recommendations compared to unaffiliated and

acquirer-affiliated analysts after the deal announcement during quarter +2Q. Target-affiliated analysts' recommendations return to the consensus level during quarter 3Q and 4Q after the deal announcement.

The results presented in figure 4 give support to my hypotheses of acquirer-affiliated analysts issuing more positive recommendations on average compared to unaffiliated or target-affiliated analysts. In addition, the target-affiliated analysts' behaviour seen in figure 4 seems to give support to my strategic behaviour hypotheses related to stock financed deals since target-affiliated analysts seem to be pessimistic related to unaffiliated and affiliated analysts prior the deal announcement and then clearly more optimistic during quarter +2Q after the announcement.

5.2.2. Regression results

Table 5.10 in the following pages presents my results related to analyst affiliation, deal value and reputation. Panel A presents the results related to acquirer-affiliated analysts and panel B the results related to target-affiliated analysts. Other results are not tabulated due to their lack of statistical significance. However, there are some statistically significant results also for deal timing and dynamic analyst behaviour related analyses, which are reported and commented on.

As can be seen from the table 5.10 both panels A and B, the results for affiliation, deal value and reputation on relative recommendations seem to have poor statistical significance. The only statistically significant coefficient is on $Affil_{Acq}$*DealVal in model 2, not considering the control variables. Interestingly there is a negative coefficient reported on $Affil_{Acq}$ in model 2 contrary to other models in table xx and thus it seems that the $Affil_{Acq}$*DealVal –variable has a stronger effect than the mere acquirer-affiliation on relative recommendations in model 2. The coefficient on $Affil_{Acq}$*DealVal –variable converts to an odds ratio of 1,12, which means that given a one unit increase in $Affil_{Acq}$*DealVal, the odds of issuing a more optimistic recommendation compared to the lower categories (more pessimistic or the same level) increases by 1,12. Thus the results suggest that acquirer-affiliated analysts issue more optimistic recommendations if the deal value is large compared to deals where the deal value is smaller. Thus these results provide support for my hypotheses that affiliated analysts' bias might increase when the deal value increases. However, the model significance is poor (0,422) and thus the result is not very reliable.

Regressions are run on *Top15* explanatory variable as well, but the results are statistically insignificant and thus are not tabulated here. Regressions are run on *Hostile* explanatory variable as well to see if the affiliated analysts' behaviour is different in hostile deals. The results are insignificant and are not tabulated.

TABLE 5.10 Panel A. Results related to affiliation, deal value and reputation. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable *relative recommendation* has values -1 (more pessimistic), +1(more optimistic), 0 (no difference). $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for target- and acquirer-affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Value*-variable is the natural logarithm of the deal value, *Top15* dummy variable is used as a proxy of both analyst and bank reputation and takes on value 1 if the analyst is working for one of the 15 largest market share banks, 0 otherwise. *Stock* variables takes on value 1 if the deal was 50% stock financed, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A Variable	Exp. Sign	Model 1	Model 2	Model 5
AffiAcq	+	0,081	-0,546	0,080
		(0,125)	(0,418)	(0,146)
Value	+	0,002	-0,001	0,002
		(0,012)	(0,012)	(0,012)
$Affil_{Acq}$*DealVal	+		0,113*	
			(0,073)	
Stock	+			-0,046
				(0,057)
$Affil_{Acq}$*Stock	?			-0,003
				(0,273)
SameSic	?	0,068	0,072	0,076
		(0,051)	(0,051)	(0,051)
Size		-0,032**	-0,033***	-0,034***
		(0,013)	(0,012)	(0,013)
MBVal		-0,013	-0,013	-0,013
		(0,012)	(0,012)	(0,012)
Debt		0,001	0,001	0,001
		(0,001)	(0,001)	(0,001)
Number of observations		6 278	6 278	6 278
Chi^2		13,06	15,42	10,83
Significance		0,5215	0,4218	0,2113

TABLE 5.10 Panel B. Results related to affiliation, deal value and reputation. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable *relative recommendation* has values -1 (more pessimistic), +1(more optimistic), 0 (no difference). $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for target- and acquirer-affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Value*-variable is the natural logarithm of the deal value, *Top15* dummy variable is used as a proxy of both analyst and bank reputation and takes on value 1 if the analyst is working for one of the 15 largest market share banks, 0 otherwise. *Stock* variables takes on value 1 if the deal was 50% stock financed, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B Variable	Exp. Sign	Model 1	Model 2	Model 5
$Affil_{Target}$	-	-0,089	-0,089	-0,136
		(0,149)	(0,149)	(0,192)
Value	?	0,002	0,002	0,002
		(0,012)	(0,012)	(0,012)
$Affil_{Target}$*DealVal	-		Dropped	
Stock	?			-0,050
				(0,057)
$Affil_{Target}$*Stock	?			0,143
				(0,301)
SameSic	?	0,069	0,069	0,075
		(0,051)	(0,051)	(0,051)
Size		-0,033***	0,002***	-0,034***
		(0,012)	(0,012)	(0,013)
MBVal		-0,013	-0,013	-0,013
		(0,012)	(0,012)	(0,012)
Debt		0,001	0,001	0,001
		(0,001)	(0,001)	(0,001)
Number of observations		6 278	6 278	6 278
Chi^2		12,94	12,94	10,93
Significance		0,531	0,531	0,2055

Deal timing related results are not tabulated here due to their lack of statistical significance. The results for models 7 and 10 are statistically insignificant for both affiliation variables and Top15 variable. The situation is mostly the same for models 8 and 11, even though variables $Affil_{Acq}$ and $Affil_{Acq}$*HighVol in model 11 have statistically significant coefficients, 0,378 (0,226) and -0,443 (0,269) respectively, standard errors are in parenthesis. Both are significant at 10% level. Thus the results suggest that acquirer-affiliated recommendations issued during high M&A volume markets tend to more pessimistic compared to the consensus recommendations than acquirer-affiliated recommendations issued during low M&A volume. However, the model significance is merely 0,0822 and thus these results are not very reliable. The regression models are run for variable Top15 as well, but the results were insignificant and are not tabulated here. Regressions are run on *Hostile* explanatory variable as well to see

if the affiliated analysts' behaviour is different in hostile deals. The results are insignificant and are not tabulated.

However, in model 12, variable RegChange has statistically significant values both in target-affiliation and Top15 banks related regressions. The coefficients on target-affiliated related model are for RegChange -0,082, significant at 5% level, standard error being 0,050, and for $Affil_{Target}$*RegChange-variable 0,283 (not statistically significant). The coefficients for Top15 related regression model are -0,130, significant at 10% level, standard error being 0,058 for Top15-variable and for Top15*RegChange-varible -0,074 (not statistically significant). Thus the results suggest that recommendations issued after the regulation change by other than target-affiliated (target-affiliation related model) or non-Top15 bank employed analysts (Top15 related model) are less optimistic compared to the consensus than recommendations issued prior to the regulation changes. However, the model significance is merely 0,0471 and thus these results are not very reliable.

Results related to the dynamic analyst behaviour surrounding M&A deal announcement are mostly statistically insignificant and are not tabulated here. However, in Model 3, variable Top15*After is statistically significant at 10% level. It has a coefficient of 0,174 and standard deviation of 0,103. The coefficient 0,174 converts into an odds ratio of 1,19 which means that for a one unit increase in Top15*After the odds of issuing a more optimistic recommendation compared to the consensus recommendation versus the lower categories are 1,19 greater. However, the model significance is 0,123 and thus the result is nor very reliable. In addition, -1Q * $Affil_{Acq}$ has a significant coefficient in model 6 for acquirer-affiliation. The coefficient is 0,831, standard error 0,489 and significance is 10% level. This result suggests that acquirer-affiliated analysts issue more optimistic recommendations compared to the consensus versus other analysts in my study, which gives support to my hypothesis of acquirer-affiliation resulting in overly optimistic recommendations prior the deal announcement. However, the model significance is again very poor (0,511) and thus the results are not reliable.

5.3. Recommendation revisions

5.3.1. Descriptive and summary data

Table 5.11 below presents the minimum, mean, median and maximum recommendation revisions by analyst affiliation. The results presented in table 5.11 suggest that in my sample, unaffiliated analysts have the highest positive revision and thus upgrade the acquirer stock the most. This might be due to the fact that affiliated analysts' revisions are partitioned to different quarters surrounding the M&A deal announcement (see figure 5) and this dynamic pattern can not be seen in table 5.11.

TABLE 5.11. The minimum, median, mean and maximum recommendation revision according to analyst affiliation.

Affiliation	Min	Median	Mean	Max	N
Target	-4	1	0,508	5	153
Acquirer	-4	1	0,734	5	237
Unaffiliated	-4	1	0,763	5	5 889
Total					6 279

FIGURE 5 Analyst average recommendation revisions about acquirer firms by quarter.

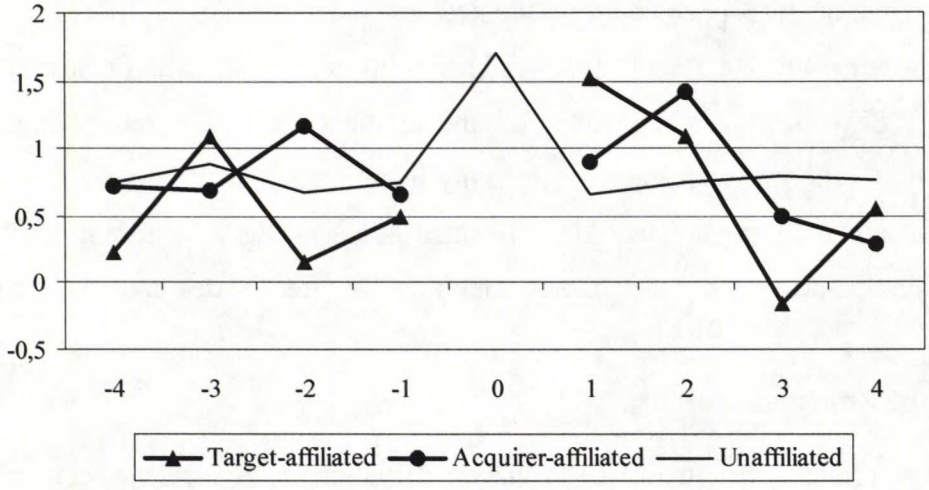


Figure 5 plots acquirer-affiliated, target-affiliated and unaffiliated analysts' recommendation revisions for acquirer firms for the two-year period surrounding the announcement of the M&A deal. Target-and acquirer-affiliated analyst recommendations were not issued on quarter 0. Positive values in figure 5 are recommendation upgrades and negative values downgrades. Quarters are presented in X axis and quarter 0 represents M&A deal announcement quarter.

Figure 5 in the previous page presents average recommendation revision partitioned by affiliation and quarters surrounding the M&A deal announcement. The largest upgrades in the figure 5 are done by unaffiliated analysts during quarter 0. Results presented in figure 5 imply that the second largest upgrades are done by target-affiliated analysts during quarter +1Q after the deal announcement. In addition, results in figure 5 imply that acquirer-affiliated analysts have upgraded acquirer's stock more than unaffiliated and target-affiliated analysts during quarter -2Q prior the deal announcement and quarter +2Q after the announcement. Results in figure 5 imply in addition that target-affiliated analysts have upgraded acquirer's stock more than unaffiliated and acquirer-affiliated analysts during quarter -3Q prior the M&A deal announcement and +1Q after the announcement. However, target-affiliated analysts seem to have downgraded acquirer's stock during quarter 3Q after the announcement. In addition, target-affiliated analyst have upgraded acquirer's stock less than acquirer-affiliated and unaffiliated analysts during quarters -4Q , -2Q and -1Q prior the announcement.

The results presented in figure 5 imply that acquirer-affiliated analysts' revisions deviate from unaffiliated analysts' revisions mostly during quarters -2Q before the deal announcement and +1Q and +2Q after the announcement. These results suggest that acquirer-affiliated analysts upgrade acquirer stock more than unaffiliated prior and after the deal announcement and seem to give support to my hypothesis of acquirer-affiliated analysts upgrading the acquirer more than unaffiliated analysts prior and after the deal announcement. In addition, results in figure 5 imply that target-affiliated analysts upgrade acquirer's stock less than unaffiliated analysts prior to the deal announcement and after the announcement in quarters +3Q and +4Q. Additionally, figure 5 gives some support to my hypotheses related target-affiliated analysts' strategic behaviour in stock financed deals since target-affiliated analysts seem to upgrade acquirer's stock more than the unaffiliated analysts right after the deal announcement.

5.3.2. Regression results

Table 5.12 presents my results related to analyst affiliation, deal value and reputation. Panel A presents the results related to acquirer-affiliation and panel B the results related to target-affiliation. The results for deal timing are not tabulated here due to their low significance.

As can be seen from both of the panels in table 5.12 in the following pages, results for recommendation revisions on affiliation, deal value and stock related variables are mostly

statistically insignificant. However, the coefficient on $Affil_{Acq}$ in model 1 has the same sign as the coefficients for absolute recommendation levels. In models 2 and 5, the coefficients on $Affil_{Acq}$ are negative. The negative sign on $Affil_{Acq}$ in model 5 may be explained by the statistically significant positive coefficient on $Affil_{Acq}$*Stock. The positive coefficient on $Affil_{Acq}$*Stock-variable converts to an odds ratio of 2,10 which means that for a one unit increase in the $Affil_{Acq}$*Stock-variable, the odds of an higher recommendation revision, i.e. an upgrade versus the combined lower categories (lower revision and the same revision) is 2,10 times grater. These results suggest that stock financing has an effect on acquirer-affiliated analysts' recommendation revisions. In addition, the results imply that acquirer-affiliated analysts' recommendation upgrade is more probable if the deal is financed with at least 50 percent with stock compared to deals with less or no stock financing. The coefficient sign change in model 2 for deal value implies similar effect for large deal values even though it is not statistically significant.

Regressions are run on *Top15* explanatory variable as well, but the results are statistically insignificant and thus are not tabulated here. Regressions are run on *Hostile* explanatory variable as well to see if the affiliated analysts' behaviour is different in hostile deals. The results are insignificant and are not tabulated.

TABLE 5.12 Panel A. Results related to affiliation, deal value and reputation. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable *recommendation revision* has discrete values -1 (downgrade), +1 (upgrade), 0 (no change). $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Value*-variable is the natural logarithm of the deal value. *Stock* variable takes on value 1 if the deal was 50% stock financed, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A Variable	Exp. Sign	Model 1	Model 2	Model 5
AffiAcq	+	0,044 (0,137)	-0,333 (0,455)	-0,123 (0,153)
Value	+	-0,011 (0,014)	0,011 (0,014)	-0,011 (0,014)
$Affil_{Acq}$*DealVal	+		0,068 (0,078)	
Stock	+			-0,019 (0,062)
$Affil_{Acq}$*Stock	+			0,743** (0,344)
SameSic	?	0,009 (0,057)	0,012 (0,057)	-0,001 (0,057)
Size		0,012 (0,014)	0,011 (0,014)	0,014)
MBVal		-0,015 (0,014)	-0,016 (0,014)	-0,014 (0,014)
Debt		0,006*** (0,002)	0,006*** (0,002)	0,006*** (0,002)
Number of observations		6 278	6 278	6 278
Chi^2		22,71	23,48	20,04
Significance		0,0651	0,0745	0,0102

TABLE 5.12 Panel B. Results related to affiliation, deal value and reputation. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable *recommendation revision* has discrete values -1 (downgrade), +1 (upgrade), 0 (no change). $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Value*-variable is the natural logarithm of the deal value. *Stock* variable takes on value 1 if the deal was 50% stock financed, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B Variable	Exp. Sign	Model 1	Model 2	Model 5
$Affil_{Target}$	-	-0,073	-0,300	-0,085
		(0,167)	(0,621)	(0,209)
Value	?	-0,011	-0,012	-0,011
		(0,014)	(0,014)	(0,014)
$Affil_{Target}$*DealVal	-		0,039	
			(0,057)	
Stock	?			0,005
				(0,062)
$Affil_{Target}$*Stock	?			0,029
				(0,349)
SameSic	?	0,009	0,011	0,003
		(0,057)	(0,057)	(0,057)
Size		0,011	0,011	0,013
		(0,014)	(0,014)	(0,014)
MBVal		-0,016	-0,016	-0,014
		(0,014)	(0,014)	(0,014)
Debt		0,006*	0,006***	0,006***
		(0,278)	(0,002)	(0,002)
Number of observations		6 278	6 278	6 278
Chi^2		22,82	22,94	15,34
Significance		0,0633	0,0854	0,0528

Deal timing related results for model 7 are statistically insignificant for both affiliation and Top15 related models and are not tabulated here. Also results for models 8 and 11 on high M&A volume periods are statistically insignificant and not tabulated here. The same applies for models 9 and 12 on regulation change. However, there are statistically significant results for model 10 which is related to bull market periods. The coefficient on variable Bull is statistically significant for both target- and acquirer-affiliation related regressions, but not for Top15 related model. The results for Bull-variable are 0,109 (0,063) significant at 10 % level for acquirer-affiliation related regression and 0,110 (0,063) significant at 10 % level for target-affiliation related regression and thus are nearly the same. Coefficient 0,110 converts to an odds ratio of 1,12 which implies that the odds of a recommendation upgrade are 1,12 times grater for recommendations issued during bull markets than for recommendations issued during other times by other than affiliated analysts. The coefficients on $Affil_{Acq}$*Bull,

$Affil_{Target}$*Bull and Top15*Bull are negative but statistically insignificant. However, the results imply that unaffiliated analysts hired by less reputable banks issue higher revisions than affiliated and Top 15 banks hired analysts during bullish market conditions. These results are not in line with my hypothesis that affiliated analysts issue more optimistic recommendations during stock market upturns. However, the results provide support for my hypothesis that Top15 banks employed analysts issue lower recommendations.

Tables 5.13 and 5.14 in the following pages present results on dynamic analysts' recommendation revision behaviour surrounding the M&A deal announcement. Only acquirer-affiliation related results on stock deal data are tabulated for models 3 and 4 since other results are not statistically significant. However, the coefficient signs for target-affiliation are in line with the results reported in section 5.1.2. Results for model 6 are presented for both all deals data sample and stock financed deals sample. Here the deal is considered as stock financed if any stock is used as a form of payment in the deal. This differs from the definition of a stock financed deal used in section 5.1.2. due to the fact that in order to avoid problems with multicollinearity, the sample size needs to be increased. This results in 3 152 stock deals in my sample.

Table 5.13 next page presents the acquirer-affiliation related results for models 3 and 4. Model 3 has statistically significant and positive coefficient on variable $Affil_{Acq}$*After which implies that the odds that an acquirer-affiliated analyst issues an upgrade after the deal announcement are higher than if the recommendation is issued prior the deal announcement. The result is confirmed by the statistically significant negative coefficient on variable $Affil_{Acq}$*Before. These results imply that acquirer-affiliated analysts issue lower recommendation revisions prior stock financed deals and higher revisions after the deal announcement. The results are not in line with my strategic analyst recommendation behaviour or with the selection bias hypothesis. In contrast, the results imply that acquirer-affiliated analysts might aim to enhance their reputation by downgrading acquirer's stock prior the deal announcement.

TABLE 5.13 Panel A: Results related to the analysts' recommendation issuing behaviour surrounding M&A deal announcement. Panel A presents the estimated coefficients and standard errors for acquirer-affiliation. The dependent variable *recommendation revision* has discrete values -1 (downgrade), +1 (upgrade), 0 (no change). $ffil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *After* and *Before* are dummy variables for the time of the report issuance related to the M&A deal announcement. *After* variable takes on value 1 if the report has been announced after the deal announcement, 0 otherwise. *Before* variable takes on value 1 if the report has been issued prior the deal announcement, 0 otherwise. *SameSic* variable takes on the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A Variable	Exp. Sign	**Any Stock** Model 3	**Any Stock** Model 4
$Affil_{Acq}$	+	-0,121	0,683**
		(0,325)	(0,299)
After	?	-0,050	
		(0,074)	
Before	?		0,055
			(0,074)
$Affil_{Acq}$*After	+	0,778*	
		(0,442)	
$Affil_{Acq}$*Before	+		-0,855**
			(0,444)
SameSic	?	0,178**	0,179**
		(0,083)	(0,083)
Size		-0,017	-0,017
		(0,019)	(0,019)
MBVal		-0,051**	-0,051**
		(0,022)	(0,022)
Debt		0,007**	0,007**
		(0,002)	(0,002)
Number of observations		3 152	3 152
Chi^2		22,93	23,53
Significance		0,0034	0,0027

Table 5.14 on page 101 presents results on model 6 on dynamic analysts' recommendation revision behaviour surrounding the M&A deal announcement. I have divided the time periods *before* and *after* into quarters to be able to study the analyst behaviour surrounding the deal announcement more precisely. I have used two reference categories for the Quarter-dummy variables, -4Q and 0Q as in section 5.1.2. Results for control variables are in line with the previous models but have not been tabulated to save space. The quarterly deviations in analyst recommendations are studied for both all data (6 278 recommendations) and stock deal data consisting of deals with any stock financing (3 152 recommendations). There are multicollinearity issues with the model run on stock data and the model can not be estimated separately for both reference categories mentioned above. Thus only one set of results is

presented. In addition, the model had to be run separately for quarters before and after the M&A deal announcement for target-affiliation.

Panel A presents the results for acquirer-affiliation. For all deals sample, variables -3Q, 0Q and 2Q*$Affil_{Acq}$ have statistically significant positive coefficients when -4Q is used as the reference category. These results suggest that relative to -4Q, other than acquirer-affiliated analysts seem to upgrade acquirer's stock during quarters -3Q and 0Q. Contrary to this, acquirer-affiliated analysts seem to upgrade acquirer's stock during quarter 2Q after the deal announcement. The coefficient 1,080 on 2Q*$Affil_{Acq}$-variable converts into an odds ratio of 2,944 which means that the odds of an acquirer-affiliated analysts upgrading acquirer's stock is 2,944 times greater during quarter 2Q compared to the revisions they issue during other quarters and to the revisions issued by other analysts during quarter 2Q. These results give support for my hypothesis that acquirer-affiliated analysts upgrade acquirer's stock after the M&A deal announcement.

Reference category 0Q results in more statistically significant results for all deals data sample as can be seen from table 5.14 panel A next page. -4Q, -2Q, -1Q, 1Q, 2Q and 4Q are statistically significant and negative. Thus the recommendation revisions issued by other than acquirer-affiliated analysts during those quarters are more probably downgrades than the revisions issued during quarter 0. This implies that there are upgrades during the quarter when M&A deal is announced. In addition, results for variables -2Q*$Affil_{Acq}$ and 2Q*$Affil_{Acq}$ are statistically significant and both coefficients are positive. These results suggest that acquirer-affiliated analysts seem to upgrade acquirer's stock during quarters -2Q and 2Q compared to other quarters. Again, these results give support to my hypothesis of acquirer-affiliated analysts upgrading acquirer's stock more than the consensus after the deal has been announced.

In addition, the statistically significant positive coefficient on -2Q*$Affil_{Acq}$ suggests that acquirer-affiliated analysts would upgrade acquirer's stock prior to the deal announcement. This might be reasonable especially in stock financed deals. Acquirer-affiliated analysts can aid in improving the deal conditions for an acquirer-client if the stock price can be raised up prior the stock exchange ratio has been decided. This would lead to the payment consisting of smaller number shares and the exchange ratio would thus be more beneficial to the acquirer-client. In cash deals, the upgrading of acquirer's stock could be seen as a form of general

optimism of the acquirer-affiliated analysts about the acquirer, and thus the result would give support to my hypotheses of acquirer-affiliated analysts being overly optimistic about client firm stock.

Results for acquirer-affiliation on deals with any stock financing are in line with the results presented above. The coefficients on variables 1Q*$Affil_{Acq}$ and 2Q*$Affil_{Acq}$ are positive and statistically significant which suggests that acquirer-affiliated analysts upgrade acquirer's stock after a stock financed deal is announced. In addition, the coefficient for -2Q*$Affil_{Acq}$ is positive but statistically insignificant. These results differ from the results for models 3 and 4 presented in table 5.13 in page 98. However, the negative coefficient on $Affil_{Acq}$-variable picks up the coefficient of the dropped variable $Affil_{Acq}$*-3Q and is negative, although not statistically significant. This result implies that the negative coefficient on variable $Affil_{Acq}$*Before might be caused by acquirer-affiliated analysts' downgrades during quarter -3Q.

TABLE 5.14 Panel A. Results related to the dynamic recommendation behaviour surrounding M&A deal announcement Panel A presents the estimated coefficient and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable *recommendation revision* has discrete values -1 (downgrade), +1 (upgrade), 0 (no change). $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Q(uarter)* refers to a set of dummy variables and takes on value 1 if the recommendation is issued during a given quarter, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL A		**All data Reference -4Q**	**All data Reference 0Q**	**Any stock**
Variable	Exp. Sign	Model 6	Model 6	Model 6
$Affil_{Acq}$	-	-0,177	-0,434	-0,452
		(0,438)	(0,425)	(0,778)
-4Q			-0,481*	
			(0,278)	
-3Q		0,179*	-0,301	0,635***
		(0,113)	(0,277)	(0,165)
-2Q		-0,032	-0,513*	0,417***
		(0,110)	(0,276)	(0,158)
-1Q		-0,016	-0,497*	0,127
		(0,111)	(0,276)	(0,156)
0Q		0,481*		0,554
		(0,278)		(0,464)
1Q		-0,002	-0,483*	0,304**
		(0,108)	(0,275)	(0,155)
2Q		-0,023	-0,504*	0,114
		(0,110)	(0,275)	(0,156)
3Q		0,072	-0,409	0,318**
		(0,111)	(0,276)	(0,158)
4Q		0,028	-0,453*	0,242
		(0,111)	(0,276)	(0,159)
-4Q*$Affil_{Acq}$	?	Dropped	0,260	0,571
			(0,610)	(1,036)
-3Q*$Affil_{Acq}$	+	-0,260	Dropped	Dropped
		(0,610)		
-2Q*$Affil_{Acq}$	+	0,903	1,162*	0,256
		(0,651)	(0,642)	(1,086)
-1Q*$Affil_{Acq}$	+	0,031	0,291	0,391
		(0,563)	(0,552)	(0,933)
1Q*$Affil_{Acq}$	+	0,425	0,685	2,254**
		(0,556)	(0,546)	(1,090)
2Q*$Affil_{Acq}$	+	1,080*	1,340**	1,820*
		(0,619)	(0,609)	(1,013)
3Q*$Affil_{Acq}$	+	-0,151	0,109	-0,107
		(0,579)	(0,569)	(1,002)
4Q*$Affil_{Acq}$	+	-0,132	0,128	0,492
		(0,560)	(0,550)	(0,962)
Controls used		√	√	√
Number of observations		6 278	6 278	3 152
Chi^2		32,59	32,59	50,51
Significance		0,051	0,051	0,0003

Panel B presents the results for target-affiliation. For all deals sample and reference category -4Q, variables 0Q, 1Q*$Affil_{Target}$ and 2Q* $Affil_{Target}$ are statistically significant. The positive coefficient on 0Q suggests that relative to -4Q, other than target-affiliated analysts seem to upgrade acquirer's stock during quarter 0Q which is in line with the results related to acquirer-affiliation and presented in panel A. The coefficients on both significant target-affiliated quarter variables are positive. Thus the results suggest that target-affiliated analysts upgrade acquirer's stock during quarters 1Q and 2Q after the deal announcement relative to -4Q. The coefficients convert to odds ratios of 4,402 and 2,737 for quarters 1 and 2 respectively. This means that the odds of issuing an upgrade is 4,402 times and 2,737 times grater if the analyst issuing the revision is a target-affiliated analyst and the revision is issued during quarter 1Q or 2Q respectively. These results give support to my hypothesis that target-affiliated analysts upgrade acquirer's stock after the M&A deal has been announced more than prior the announcement. However, the model significance is poor for both all deals sample and stock deal data and thus the results are not very reliable.

For all deals sample and reference category 0Q, there are more statistically significant quarters without affiliation as can be seen from table 5.14 panel B next page. Coefficients on all quarters without target-affiliation relationship are negative and thus the results suggest that the odds that a revision is an upgrade decrease if the revision is issued during other quarters than the M&A deal announcement quarter by other than target-affiliated analyst. This implies that there are upgrades during quarter 0Q which confirms the results of acquirer-affiliation related models. There are no statistically significant results for target-affiliated analysts when the reference category is 0Q. However, the coefficients are in line with the results for reference category -4Q. However, the model significance is poor for both all deals sample and stock deal data and thus the results are not very reliable.

For any stock deals sample and quarters before the deal announcement, there are no statistically significant coefficients on target-affiliation. However, all coefficients are positive which would imply that target-affiliated analysts upgrade acquirer's stock prior the deal announcement. For quarters after the deal announcement, a negative coefficient for 3Q*$Affil_{Target}$ is statistically significant which would imply that target-affiliated analysts downgrade acquirer's stock during quarter 3 after the deal announcement. These results contradict my hypotheses of strategic analyst behaviour. However, the model significance is poor and thus the results are not very reliable.

TABLE 5.14 Panel B. Results related to the dynamic recommendation behaviour surrounding M&A deal announcement Panel A presents the estimated coefficient and standard errors for acquirer-affiliation and Panel B for target-affiliation. The dependent variable *recommendation revision* has discrete values -1 (downgrade), +1 (upgrade), 0 (no change). $Affil_{Target}$ and $Affil_{Acq}$ are dummy variables for affiliation and take on value 1 if the recommendation is given by an affiliated analyst and 0 otherwise. *Q(uarter)* refers to a set of dummy variables and takes on value 1 if the recommendation is issued during a given quarter, 0 otherwise. *SameSic* variable takes the value 1 if the acquirer and target firms are operating in the same industry, 0 otherwise. *Size*-variable is the natural logarithm of the acquirer's market value. *MBVal* is acquirer's market-to-book ratio. *Debt* is acquirer's debt to assets ratio. *Acquirer market value* is measured 14 days prior to the acquisition and other control variables are measured as previous financial year end prior to the acquisition. Robust standard errors in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%

PANEL B		**All data Reference -4Q**	**All data Reference 0Q**	**Any stock Before**	**Any stock After**
Variable	Exp. Sign	Model 6	Model 6	Model 6	Model 6
$Affil_{Target}$		-0,657	-0,1558	-0,295	0,002
		(0,410)	(0,703)	(0,280)	(0,266)
-4Q			-0,461*		
			(0,278)		
-3Q		0,138	-0,323	0,393***	
		(0,113)	(0,277)	(0,124)	
-2Q		-0,035	-0,496*	0,171	
		(0,110)	(0,276)	(0,132)	
-1Q		-0,039	-0,500*	-0,102	
		(0,111)	(0,276)	(0,110)	
0Q		0,461*		0,307	
		(0,278)		(0,451)	
1Q		-0,026	-0,487*		reference
		(0,108)	(0,275)		
2Q		-0,022	-0,483*		-0,158
		(0,110)	(0,275)		(0,111)
3Q		0,058	-0,403		0,024
		(0,111)	(0,276)		(0,114)
4Q		-0,005	-0,466*		-0,065
		(0,111)	(0,276)		(0,115)
-4Q*$Affil_{Target}$	?		-0,501	reference	
			(0,813)		
-3Q*$Affil_{Target}$	-	0,909	0,407	0,248	
		(0,620)	(0,843)	(0,678)	
-2Q*$Affil_{Target}$	-	0,714	0,213	0,581	
		(0,615)	(0,839)	(0,658)	
-1Q*$Affil_{Target}$	-	0,489	-0,012	0,063	
		(0,637)	(0,855)	(0,686)	
1Q*$Affil_{Target}$	+	1,482**	0,981		
		(0,707)	(0,910)		
2Q*$Affil_{Target}$	+	1,007*	0,506		0,101
		(0,621)	(0,844)		(0,657)
3Q*$Affil_{Target}$	-	-0,142	-0,644		-1,422**
		(0,623)	(0,845)		(0,726)
4Q*$Affil_{Target}$	-	0,501	Dropped		-0,389
		(0,813)			(0,951)
Controls used		√	√	√	√
Number of observations		6 278	6 278	3 152	3 152
Chi^2		31,00	31,00	34,26	25,33
Significance		0,0736	0,0736	0,0011	0,0209

5.3.3. Discussion

The most meaningful factors for the analysis on recommendation revisions seem to be the interaction terms between the analyst affiliation and report timing in relation to the M&A deal announcement, especially for acquirer-affiliation. The results for the acquirer-affiliated analysts' behaviour prior the M&A deal announcement are mixed as was the case for absolute recommendation levels. Contrary to my strategic recommendation behaviour hypotheses, results for models 3 and 4 imply that acquirer-affiliated analysts downgrade acquirer's stock prior the M&A deal announcement. This result suggests that acquirer-affiliated analysts may aim to enhance their reputation by exploiting the insider information about the deal.

However, the results for stock deal data for model 6 imply that the acquirer-affiliated analysts' downgrades might be timed to quarters -3Q and +3Q, other quarters having positive coefficients. The results imply that selection bias is not at play. In addition, coefficient on stock-variable in model 5 for acquirer-affiliation is positive and statistically significant, which suggests that acquirer-affiliated analysts issue upgrades about their client firm's stock in stock deals. Nevertheless, evidence for my hypotheses that acquirer-affiliated analysts upgrade acquirer's stock after the deal announcement is provided both for stock financed deals and for all deals sample. In addition, my results imply that acquirer-affiliated analysts upgrade acquirer's stock both in all deals sample and in any stock sample during quarters 1Q and 2Q.

Results for target-affiliation are more modest. The downgrade during quarter 3Q implied by figure 5 is recognised in the statistical analyses, other results are statistically insignificant. Additionally, support for my strategic recommendation behaviour hypotheses is not provided.

In addition to the results considering acquirer-affiliation, the most interesting result in this section is the upgrades issued by other than affiliated analysts during the M&A announcement quarter. Table 5.15 next page summarises the main results for my hypotheses. In addition, it presents the models used to study the hypotheses.

TABLE 5.15. Main results. Table 5.15 presents my main results, hypotheses and models used to study them.

	Hypotheses	Model	Results
H1	Affiliated analysts upgrade acquirer-client's stock after the deal has been announced	3,6	Supporting evidence for both recommendations and revisions and both for stock deals and all deals sample.
H2	Acquirer-affiliated analysts issue more high level ("Strong buy" and "Buy") recommendations about acquirer's stock than other analysts	1	Supporting evidence for recommendations in all deals sample.
H3	Acquirer-affiliated analysts issue less negative ("Sell" and "Strong sell") recommendations than other analysts	1	Supporting evidence for recommendations in all deals sample.
H4	Target-affiliated analysts are pessimistic about the acquirer and issue lower level recommendations about acquirer's stock	1	Supporting evidence for recommendations in all deals sample
H5	Analysts hired by the top 15 largest banks issue less optimistic research	1	No evidence provided.
H6	In stock-deals, target-affiliated analysts issue lower recommendations or downgrade acquirer's stock before the deal has been announced and the exchange ratio set	4,5,6	Supporting evidence for recommendations in stock deals data and for revisions in all deals data.
H7	In stock-deals, target-affiliated analysts issue higher recommendations or upgrade acquirer's stock after the deal has been announced and the exchange ratio set	3,5,6	Supporting evidence for recommendations in stock deals data and for revisions in all deals data.
H8	In stock deals, acquirer-affiliated analysts issue higher recommendations or upgrade the acquirer's stock before the exchange ratio has been decided	4,5,6	Mixed evidence. Quarter analysis suggests that higher recommendations / upgrades are issued during all other quarters than -2Q and -3Q in all deals sample.
H9	Affiliated analysts downgrade acquirer's stock before the announcement of a stock financed deal	4,5,6	Mixed evidence. Quarter analysis suggests that lower recommendations / downgrades are issued during quarters -2Q and -3Q by both acquirer- and target-affiliated analysts in all deals sample.
H10	Bias in affiliated analysts' recommendations is larger when deal value is large	2	Supporting evidence especially for target-affiliation for recommendations in all deals data.
H11	Target-affiliated analysts upgrade acquirer stock after a hostile deal is announced	1	No evidence provided for either all deals sample or stock deal data.
H12	Investment bank employed analysts issue more high recommendations during high M&A volume years (2000 and 2004-2006 in my sample)	8,11	Supporting evidence that at least other than affiliated analysts issue higher recommendations in all deals sample. Positive but insignificant coefficients also for acquirer-affiliated analysts.
H13	Affiliated analysts issue overly optimistic recommendations during stock market upturns (1996-2000 and 2003-2006 in my sample)	7,10	Supporting evidence that at least other than affiliated analysts issue higher recommendations in all deals sample. Positive but insignificant coefficients also for acquirer-affiliated analysts.
H14	Affiliated analysts issue more negative ("Sell" and "Strong sell") recommendations after year 2003	9,12	Supporting evidence for recommendations in all deals sample. In addition, evidence that unaffiliated analysts issue lower recommendations after year 2003 is provided.

6. Summary and conclusions

6.1. Summary

This thesis examines the conflicts of interest in merger and acquisition situations. The conflicts of interest are assumed to rise from investment bank advisor relationship between a company participating in an M&A deal and the bank acting as an advisor. The conflicts of interest are assumed to be realised in affiliated analysts' recommendations. Analysts are considered as affiliated analysts if they are employed either by the target's or acquirer's advisor bank and issue recommendations surrounding the M&A deal announcement. Both acquirer- and target-affiliation are considered separately. The study was inspired by the small amount of studies done on M&A deals and analyst affiliation setting.

My research objectives were to find out what kinds of conflicts of interest are present in M&A deal situations and how are these potential conflicts of interest manifested in affiliated analysts' recommendations. In addition, I studied whether the form of payment, deal timing, deal value and analysts' report timing related variables have an effect on the recommendations issued by affiliated analysts. Additionally I examined the effects of the European regulation change on affiliated and unaffiliated analysts' recommendations.

My merger and acquisition data consisted of 814 deals and resulted in 6 278 recommendations about the acquirer's stock. There were no recommendations about the target companies available. Recommendations were collected form JCF database for institutional investors and the affiliation relationship was matched by hand with the M&A data collected from SDC Platinum database. There were 236 acquirer-affiliated and 153 target-affiliated recommendations in my sample. 36 percent of target-affiliated and 22 percent of acquirer-affiliated recommendations are issued surrounding stock financed deals in my sample when the deal is considered as stock deal if it has at least 50 percent of stock financing. In my sample, analysts issue recommendations according to a five categories scale.

I performed my ordered regression analysis on three dependent variables; absolute recommendation levels, relative recommendations and recommendation revisions. I was able to find statistically significant results for absolute recommendation levels and

recommendation revisions even though my main results are related to the absolute recommendation levels.

6.2. Main results and discussion

Based on the literature review, I conclude that the conflicts of interest may be formed between the investment bank and its client firm (both acquirer- and target-clients), and, when the interests of client-firm and the bank are congruent, between them and investors. In addition, matching bank –client-firm interests may conflict with bank-employed analyst's interests, if the analyst aims to maximise personal reputation by exploiting insider information.

My findings indicate that the affiliated analysts' recommendations about the acquirer's stock are affected by a number of factors. For all deals sample, my results for absolute recommendation levels suggest that acquirer-affiliated analysts issue more high level recommendations and that target-affiliated analysts issue more low level recommendations compared to other analysts in my sample. Thus the results imply that acquirer-affiliated analysts are overly optimistic about acquirer's stock. However, these results might also be due to selection bias since in stock deals acquirer-advisor seeks a high valuation of the acquirer's stock. Hence acquirer's advisor might more probably hire an analyst that is bullish about the acquirer. Additionally, support for hypotheses that target-affiliated analysts issue more negative "Strong sell" and "Sell" recommendations about the acquirer's stock prior the M&A deal announcement and more positive recommendations after the deal announcement is provided both for stock deals sample and for all deals sample. Hence support for target-affiliated analysts' strategic behaviour is provided. These findings are in line with the ones presented in Kolasinski and Kothari (2007) study.

Support for hypothesis that large deal value increases the effect of affiliation is provided especially for target-affiliation, which is in line with the findings in Kolasinski and Kothari (2007) study. In addition, evidence for my hypothesis that the European regulation change in 2003 resulted in lower recommendations is provided. Lower recommendations are issued by both affiliated and unaffiliated analysts, which is in line with a previous study by Kadan et al. (2008) considering the implications of the regulation changes in the US. Interestingly, I find also differing results compared to the Kadan et al. (2008) study. Kadan et al. (2008) find that

analyst recommendation scale has converted from five categories to three after the regulation change in 2002. Similar effect can not be seen in my results.

Evidence that stock financing affects affiliated analysts' recommendations is provided as well. My results suggest that in my sample of deals with at least 50% stock financing, acquirer-affiliated analysts issue more low level recommendations compared to my all deals sample. My results imply in addition, that target-affiliated analysts issue more high level recommendations in deals with stock financing. These findings contradict the ones in Kolasinski and Kothari (2007) study. In addition, they are not in line with the selection bias hypotheses.

Finally, the most puzzling results are related to analyst report timing in relation to the M&A deal announcement. My results suggest that the recommendation issuing time and quarter have an effect on the recommendation levels. In fact, the most statistically meaningful factors in the analysis on recommendation revisions seem to be the interaction terms between the analyst affiliation and report timing in relation to the M&A deal announcement. This is the case especially for acquirer-affiliation.

For both recommendation levels and revisions, my results suggest that both acquirer- and target-affiliated analysts issue lower level recommendations prior and higher level recommendations after the deal announcement for both stock deals and all deals sample. Hence evidence for target-affiliated analysts' strategic recommendation behaviour is provided but the findings contradict the strategic recommendation behaviour hypothesis related to acquirer-affiliation. On the contrary, these results imply that acquirer-affiliated analysts may aim to enhance their reputation.

However, when model 6 is run to study the report timing quarter more precisely, evidence that acquirer-affiliated analysts issue lower level recommendations merely during quarter -2Q in stock deal sample and quarter -3Q in all deals sample is found. In addition, the results on recommendation revisions imply that acquirer-affiliated analysts' downgrades might be concentrated on quarters -3Q and +3Q. My results suggest in addition that the recommendations and revisions issued during other quarters are positive. In fact, my results suggest that recommendations issued by acquirer-affiliated analysts during quarters -1Q prior and +1Q and +2Q after the deal announcement are positive and statistically significant which

provides support for my strategic recommendation behaviour hypothesis on acquirer-affiliation as well. In addition, my results imply that acquirer-affiliated analysts upgrade acquirer's stock during quarters 1Q and 2Q after the deal announcement which provides support for my hypothesis that acquirer-affiliated analysts upgrade acquirer's stock after the deal announcement. My results suggest in addition that report timing may explain the lower level recommendations issued by acquirer-affiliated analysts in stock deals as well.

Nevertheless, acquirer-affiliated results are mixed. On the other hand, acquirer-affiliated analysts' lower level recommendations prior the deal announcement do not provide support for the strategic behaviour hypothesis or the selection bias hypothesis. On the contrary, it implies that acquirer-affiliated analysts may try to enhance their reputation by exploiting inside information about the deal and by issuing lower recommendations about the acquirer whose stock price they assume will deteriorate after the deal announcement. Then again, the higher recommendation levels issued during quarters -1Q, 1Q and 2Q closer to the M&A deal announcement provide support for the strategic recommendation behaviour hypothesis.

To conclude, my results suggest that affiliated analysts' recommendations might be biased compared to unaffiliated analysts' recommendations. In addition, my results imply that the bias is dependent on the nature of the affiliation, i.e. acquirer-affiliated and target-affiliated analysts issue different recommendations compared to each other and to unaffiliated analysts, and that higher deal value increases the bias in affiliated analysts' recommendations. Furthermore, European regulation changes had a diminishing effect on analysts' recommendations. Additionally, my results suggest that the recommendation issuing time surrounding the M&A deal announcement has an effect on the recommendation level and on the probability of an upgrade or a downgrade. Clear conclusion on whether acquirer-affiliated analysts bias their recommendations in order to benefit their employers and client firms or themselves can not be drawn. However, my results provide evidence that target-affiliated analysts might act in the best interest of their client firms and employers.

6.3. Suggestions for further research

As discussed in the previous section, my results suggest that affiliated analyst may bias their recommendations. Hence it would be interesting to study whether the markets are able to

detect this potential bias in affiliated analysts' stock recommendations. This could be done by examining the short-term market reactions to both affiliated and unaffiliated analysts' recommendations. In addition, it would be interesting to see whether affiliated analysts' upgrades after the deal announcement perform better than unaffiliated analysts', i.e. are they truly biased or do their recommendations contain superior information. A study of the long-run returns for affiliated analysts' recommendations might shed light on that question. Additionally, the regulation changes during 2003 resulted in lower level recommendations. Studying the effect of regulation changes on market reaction to affiliated analysts recommendations would be interesting as well.

7. References

Agrawal, A. and Chen, M. 2007. Do analyst conflicts matter? Evidence from stock recommendations, Unpublished working paper, University of Alabama and University of Maryland

Andrade, G. Mitchell, M., Stafford, E., 2001. New Evidence and Perspectives on Mergers, *Journal of Economic Perspectives* Vol.15, No. 2, pp. 103-120

Bradley, Daniel, Morgan, Angela G, Wolf, Jack G, 2007. Analyst Behaviour Surrounding Tender Offer Announcements, *Journal of Financial Research*, 1, pp. 1-19

Barber, Brad, Lehavy Reuven, Trueman Brett, 2007. Comparing the Stock Recommendation Performance of Investment Banks and Independent Research Firms
Journal of Financial Economics, Forthcoming

Barber, Brad, Lehavy Reuven, McNichols Maureen, Trueman, Brett, 2001. Can Investors Profit from the Prophets? Security Analysts Recommendations and Stock Returns *Journal of Finance* Vol. 56, No. 2 pp. 531-563

Bodnaruk, A., Massa, M., Simonov, A. 2007. The dark role of investment banks in the market for corporate control. Unpublished working paper. University of Maastricht, INSEAD, Stockholm School of Economics.

Boni, L. and Womack, K. L., 2003. Analysts, industries and price momentum. Working Paper, University of New Mexico and Dartmouth College

Commission of the European Community directive 2003/125/EY published in the Official magazine no. L 339, 24/12/2003 pp. 73-77. EUR-Lex – 32003L0125 - FI

Communication from the Commission of the European Community to the Council and the European Parliament Investment research and financial analysts {SEC(2006) 1655} EUR-Lex – 52006DC0789 - FI

Dugar, A. and Nathan, S., 1995. The effect of investment banking relationships on financial analyst's earnings forecasts and investment recommendations, *Contemporary Accounting Research*, 12, pp. 131-160

Groysberg, Boris, Healy, Paul, Maber, David, 2008. What Drives Financial Analyst Compensation? Unpublished working paper, Harward Business School

Hong, H., Kubik, J.D., 2003. Analyzing the analysts: career concerns and biased earnings forecasts. *Journal of finance* 58, 313-351

Irvine, P. 2004. Analysts' forecasts and brokerage-firm trading. *Accounting Review* 79, pp. 125-150
Jegadeesh, N., Kim, J., Krische, S.D., Lee, C., 2004. Analyzing the analysts: when do recommendations add value? *Journal of Finance*, 59, pp. 1083-1124

Jegadeesh, N. and Kim, W. 2006. Value of analyst recommendations: International evidence *Journal of Financial Markets* 9, pp. 274-309

Kadan, O., Madureira, L., Wang, R., Zach, Tzachi 2008. Conflicts of interest and stock recommendations: The effects of the Global Settlement and related regulations. Working Paper, Olin Business School, Washington University, University of Saint Louis, Weatherhead School of Management, Singapore Management University

Kale, Jayant, R., Kini, Omesh and Ryan, Harley E. 2003. Financial Advisors and shareholder wealth gains in corporate takeovers *Journal of Financial and Quantitative Analysis,* vol. 30, No. 3, pp. 475-501

Kolasinski, Adam, Kothari, S.P. 2007. Investment banking and analyst objectivity: Evidence from analysts affiliated with M&A advisors. Working paper. University of Washington Business School, Seattle, MIT Sloan School of Management, Cambridge

Kothari, S.P., 2001. Capital markets research in accounting. *Journal of Accounting and Economics* 31, pp. 105-231

Lim, T., 2001. Rationality and analysts' forecast bias. *Journal of finance* 56, pp. 369-385

Lin, H., McNichols M., F. 1998. Underwriting relationships, analyst's earnings forecasts and investment recommendations, *Journal of Accounting and Economics,* 25 pp. 101-127.

Ljungqvist, A., Malloy, C., Marston F., 2007. Rewriting history, Working paper New York University, London Business School

Ljungqvist, A., Marston, F., Straks, L. Wei, T., Kelsey D., Yan, H., 2006. Conflicts of Interest in sell-side research and the moderating role of institutional investors *Journal of Financial Economics* 85, pp. 420-456

Ljungqvist, A., Marston F., Wilhelm W.J., 2003. Unpublished working paper, New York University, Stern School of Business, Centre for Economic Policy Research, University of Virginia

Ljungqvist, A., Marston, F. and Wilhelm W.J., 2005. Scaling the Hierarchy: How and Why Investment Banks Compete for Syndicate Co-management appointments. Working Paper, New York University

Ljungqvist, A., Marston, F. and Wilhelm W.J., 2006. Competing for securities underwriting mandates: Banking relationships and analyst recommendations. *Journal of Finance*, 60 pp. 301-340

Loughran, T., Vihj, A., 1997. Do Long-Term Shareholders Benefit from Corporate Acquisitions? *Journal of Finance*, 52, pp. 1765-1790

McLaughlin, R., 1990. Investment-banking contracts in tender offers. *Journal of Financial Economics* 28, pp. 209-232

McLaughlin, R., M. 1992. Does the form of compensation matter? Investment banker fee contracts in tender offers. *Journal of Financial Economics*, 32, pp. 223-260.

Meggison, W. and Weiss, K. 1991. Venture capitalist certification in initial public offerings. Journal of Finance 48, pp. 879-904

Mehran, H., Stulz, R., 2006. The economics of conflicts of interest in financial institutions. Working paper, Fisher College of Business, The Ohio State University.

Michaely, R., Womack K., 1999. Conflict of Interest and the Credibility of Underwriter Analyst Recommendations, *The Review of Financial Studies,* Vol. 12, No. 4, pp. 653-686

Mitchell, M., Mulherin, H., 1996. The Impact of Industry Shocks on Takeover and Restructuring Activity *Journal of Financial Economics* 49, pp. 193-229
Womack, K. 1996. Do brokerage analysts' recommendations have investment value? *The Journal of Finance*, Vol. 51, no. 1 pp. 137-167

Mitchell, M. and Lehn K., 1990. Do Bad Bidders Become Good Targets? *Journal of Political Economy* 98, pp. 372-398

Morgan, J. and Stocken, P. 1998. An Analysis of Stock Recommendations. Unpublished working paper, Princeton University and University of Pennsylvania

Newton, J., Cox, N., Diebold, F., Garrett, J., Pagano, M., Royston, J.. Stata Technical Bulletin. January 2000, STB-53

Patchenko, V., 2007. Impact of analysts' recommendations on stock performance *The European Journal of Finance*, vol. 13, no. 2, pp. 165-179

Rau, P. Raghavendra and Vermaelen, Theo, 1998. Glamour, Value, and the Post-Acquisition Performance of Acquiring Firms, *Journal of Financial Economics*, 49 pp. 223-253

Sirri, E., 2004. Investment Banks, Scope, and Unavoidable Conflicts of Interest, Federal Reserve Bank of Atlanta, Economic Review, Fourth Quarter

Internet sources:

Financial Industry Regulatory Authority, 27.3.2008
http://www.finra.org/RegulatoryEnforcement/FINRAEnforcementMarketRegulation/GlobalSettlement/index.htm

Confessions of a Wall Street analyst, Dan Reingold, 27.3. 2008
http://www.wallstreetconfessions.com/PDF/FinancialTimes2-9-06.pdf

West's Encyclopedia of American Laws, 27.3.2008:
http://www.enotes.com/wests-law-encyclopedia/search?m=cs&url=wests-law-encyclopedia&q=conflicts+of+interest

Wikipedia, 27.3.2008:
http://en.wikipedia.org/wiki/Conflicts_of_interest